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Industrial Policies in Colombia

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Abstract

This paper surveys and analyzes industrial policies in Colombia, finding extensive use of productive development policies (PDPs) and despite claims of only moderate government intervention. Rarely explicitly associated with the need to address market failures, PDPs are instead associated with economic reactivation and vaguely defined “competitiveness.” There are also PDPs that address government failures considered unlikely to be corrected by first-best interventions. Colombia has made progress, however, in structuring an institutional setting for PDP design that is sufficiently linked with private sector groups to elicit information on constraints and opportunities that require government intervention. Nonetheless, the overall set of PDPs in place still lacks coherence and is not always guided by the policy requests of the private sector more widely defined.

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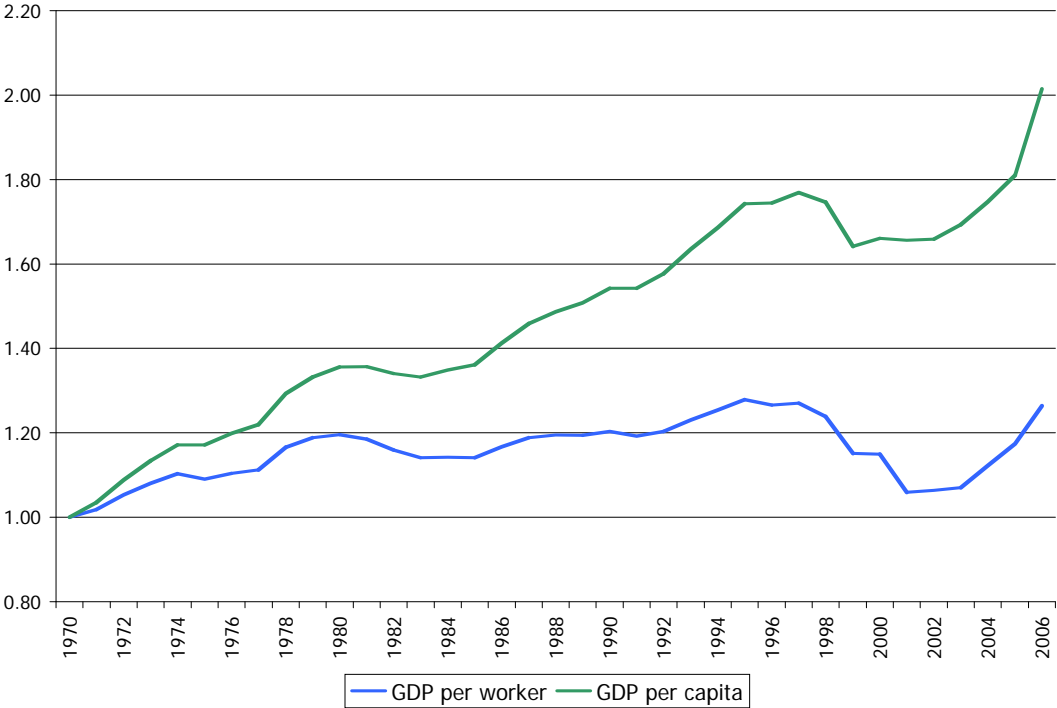
Keywords: Industrial policy, Productive development policy, Colombia

1. Introduction

Latin American and Caribbean countries' underperformance relative to other developing countries in terms of productivity growth has been reflected in only moderate average economic growth of the region over the last 15 years. Colombia is no exception.

Figure 1 summarizes the history of economic growth in Colombia since 1970. GDP per capita grew at an average annual rate of 3 percent in the 1970s and then at 2.2 percent between 1985 and 1997, but completely stagnated during the first half of the 1980s and decreased at an annual rate of -1.3 percent between 1997 and 2002. This poor performance has been partially compensated for by positive growth rates since 2003, with average annual growth of GDP per capita reaching 3.6 percent between then and 2006. Still, the average annual growth rate of 1990-2006 is only 1.4 percent.

Figure 1. Economic Growth, 1970-2005 (1970=1)



Source: DANE and GRECO (2002).

The picture is even less appealing in regard to the evolution of GDP per worker, which peaked in 1995 and then fell continuously until 2003. Despite recent recovery, GDP per worker had by the end of 2006 only reached its level of 10 years earlier.

Underlying these results is stagnant productivity. Medina, Meléndez and Seim (2003) measure plant-level TFP between 1978 and 1999 and find aggregate manufacturing productivity largely stagnates and even declines in some of the larger industries during this period.

Since aggregate productivity is essentially the outcome of decisions made by economic and social actors in response to economic policies and the way they are designed and implemented, the analysis of existing productive development policies (PDPs) may help understanding why social returns to investment are low and identifying possible lines of reform for both policies and institutional settings that may help to generate higher productivity.

We focus on the Colombian case. We show that in Colombia, use of sector-specific or region-specific PDPs as well as of more horizontal incentive policies has been extensive, despite the fiction maintained until recently of moderate government intervention. PDPs, with few exceptions, have rarely been explicitly associated in speech to market failures; this is particularly true for vertical PDPs targeting sectors or particular groups of firms. More commonly, PDPs have been associated with economic reactivation and “competitiveness,” a term that until recently dominated policymaking jargon and has been used to justify a mixed set of policies tied up by loose rationality. There is also a set of PDPs that, in the spirit of “second best” policies, address government failures considered unlikely to be corrected by first- best interventions.

Colombia has made progress, however, in structuring an institutional setting for PDP design that is sufficiently linked with private sector groups to elicit information on constraints and opportunities that require government intervention. This has been a process of trial and error that started with liberalization in the early 1990s and that, while still lacking in many dimensions, is starting to be reflected in new courses of policy action. This institutional setting for PDP design coexists, as we discuss, with another track of policymaking, in which economic groups and other private actors obtain their desired policies by entering into transactions with bureaucrats and politicians. As a result, the overall set of PDPs in place still lacks coherence and is not always guided by the policy requests of the private sector more widely defined.

This document is organized as follows. Section 2 contains an analysis of the evolution and characterization of the PDP decision-making process in Colombia. Section 3 classifies PDPs

in place according to their degree of transversality and to the channel through which they materialize, and discusses the rationales supporting them in light of the best practices economic literature. The section uses the records of the Domestic Agenda consultations and the module of Fedesarrollo's Entrepreneurial Opinion Survey (EOS) prepared for the purpose of this study¹ to complement this analysis. Sections 4 and 5 present a more detailed analysis of a set of specific horizontal and vertical PDPs, and Section 6 presents our conclusions.

2. Evolution and Characteristics of PDPs' Implementation and Institutional setting

2.1 A Paradigm Shift after Trade Opening

Colombia, like other Latin American countries, followed an import substitution industrialization (ISI) strategy from around 1950 up to 1991, though since 1967 the strategy should be rather characterized as a hybrid model that added an active export promotion strategy to ISI. The main policy instruments for the execution of the early ISI strategy were trade protectionism, subsidized and directed credit and tax exemptions. A host of institutions and additional intervention instruments were used to protect and promote agricultural development. From 1967 onwards export subsidies, credit and marketing support, plus trade agreements to secure market access and an expanded ISI strategy through the Andean Community, were added to this list of instruments, while tax exemptions were phased out under a commitment to more neutral tax policies. Macro policies were also affected by the paradigm shift: Colombia adopted a "crawling peg," instead of the previous commitments to fixed exchange rates, in order to avoid undervaluations that discriminated against exports and led to successive currency crises.² Subsidized and directed credit was significantly reduced through a comprehensive financial reform in 1974.

In 1991 the Gaviria administration drastically eliminated or reduced much of the trade protection institutions and instruments, opened the capital account, further reduced subsidized and directed credit and many other instruments of support and intervention (notably in agriculture) and initiated the privatization of public banks and utilities, in what was broadly defined as a new economic model of *apertura* (opening). The 1991 Constitutional reform

¹ Results from these sources are presented in Appendix 1.

² See Perry (2008) for an analysis of the motivations and conceptual structure behind these policy changes.

endorsed this new view (though it also retained significant scope for Government intervention), considerably decentralized public finances and services provision (a process initiated in 1968), gave autonomy to the Central Bank and reinforced the role of Development Plans, which, proposed by Government in consultation with civil society, and approved by Congress, would constitute a “super” law that gave each Government legal instruments to execute its development strategy and its public investment plan—and would afterwards constrain its policies. The new Constitution also strengthened human and social rights protection as well as political participation channels.

As a consequence of this paradigm shift, the conceptual approach to PDPs, as well as its instruments and institutions, underwent a significant change. From the previous traditional “industrial policies”, geared to promote industrialization mostly through trade protectionism and direct support to “strategic” industries –though also keeping significant protection and support to agriculture-, a new concern with “competitiveness” and institutions and processes to promote it through formal consultation and agreements with the private sector, began to emerge.

2.2 Zigzags in the Development of the Competitiveness and Productivity Agenda and Institutions from 1992 to 2006

The Gaviria Administration, through the Institute for Industrial Promotion, contracted seven sector-level “competitiveness” studies³ with the international firm Monitor, composed of previous Porter associates. Though these studies did not lead to significant action, their concept of competitiveness based on “productive chains” influenced the policy and consultation process for more than a decade.

The Samper Administration,⁴ as soon as inaugurated in 1994, approved a set of policy guidelines on competitiveness,⁵ instituted a National Council for Competitiveness and began a formal process of consultation and agreements with the private sector. The council was a mixed body, with representatives from the private sector, labor, academia and government, and reported directly to the president.⁶ Advisory committees were set up in five transversal areas: firm management, productivity and quality; technology; human resources; infrastructure; regulatory

³ For petrochemicals, flowers, leather, textiles, fruit juices, graphic arts and metal mechanics.

⁴ Samper had been Minister of Development and Trade in the Gaviria Administration, in charge of the initial process of trade opening

⁵ Council for Economic and Social Policy, CONPES, Document 2724

⁶ The Economic Secretary of the President acted as coordinator.

and legal frameworks. The technical secretariat of each committee was given to specialized Government agencies and private sector organizations. Under Council auspices, sector Competitiveness Agreements were negotiated in 11 “production chains.”⁷ Some of these agreements were geared to restructuring needs vis-à-vis increased import competition, while others were oriented towards the development of export capabilities. Most of the agreements contained concrete action plans, with government commitments in areas of regulation, trade policies, financial support and infrastructure, and private sector commitments to certain productivity or export goals. However, there was no monitoring of implementation, neither evaluation of results, so it is difficult to ascertain their effects.

The Pastrana Administration (1998-2002) left the direction of competitiveness policies to the Commission for Foreign Trade and the Ministry of Foreign Trade. The ministry launched a new policy of productivity and competitiveness, somewhat more focused on export sectors and opportunities, and developed an ambitious 10-year strategic plan for exports. The administration additionally reorganized the previous advisory committees into 10 transversal groups, corresponding to the 10 competitiveness factors defined by the World Economic Forum, under the coordination of the Red Colombia Compite (RCC). The ministry also organized public/private regional advisory competitiveness committees (CARCEs) in all departments. Led by a technocratic minister, the RCC and some of the CARCEs were very dynamic and generated a great deal of enthusiasm in the private sector during the Pastrana Administration. This organization survived but languished during the first Uribe Administration (2002-2006). Forty-one sector competitiveness agreements were negotiated from 1998 to 2006, mostly during the Pastrana Administration, including 31 with national coverage and 10 with regional coverage, 29 on industrial and agricultural “production chains” and 12 involving service sectors. These agreements had only a limited effect on Government policies, however, mostly due to the fact that the Trade Ministry was in no position to influence the policies and decisions of other ministries, often led by more politically powerful ministers with their own agendas. Other weaknesses of the process are discussed in the following section.

Even more, the first Uribe Administration established a parallel competing process in 2004, as a complement to the launching of negotiations of a Free Trade Agreement (FTA) with

⁷ Textiles and apparel; leather and leather products; siderurgy, metal mechanics and automobile industries; software; pulp, paper and graphic industries; aquiculture; maize, sorghum, cassava, poultry and pork; milk and milk derivatives; oleaginous products, oils and fats; and rice. See Flórez and Misas (2008).

the United States: the so called “Domestic Agenda.”⁸ This was a broad process of regional, sector and transversal consultations led by the National Planning Department (DNP), geared to identifying priority policies and investments required to take advantage of export opportunities under the future FTA, as well as to mitigate the impact of increased import competition from the United States. Section 3 uses the records of the Domestic agenda to discuss private sector policy demands.

2.3 Taking Stock: 2005 and 2006 Assessments of Previous Experiences

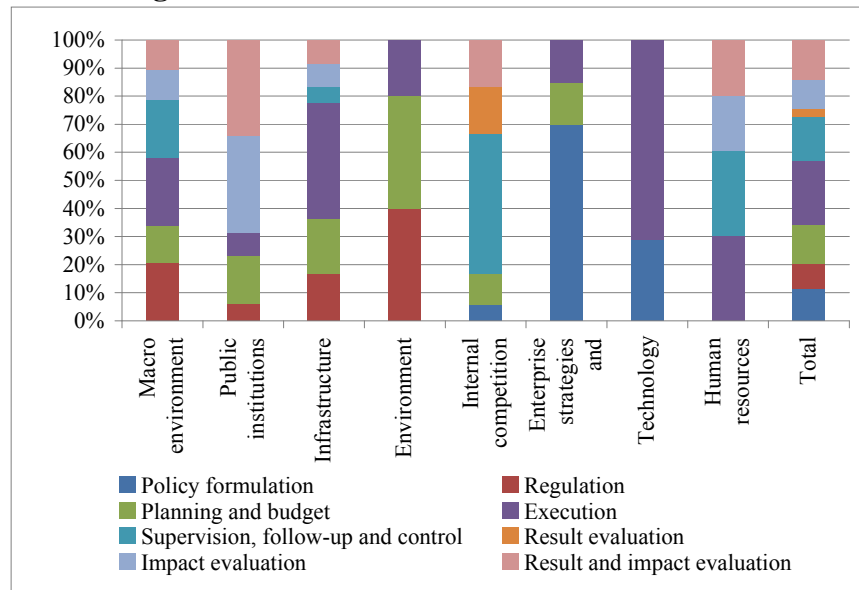
In 2006 the Government requested an international consulting agency to provide a full assessment of competitiveness policies and processes for the period 1998-2006. The study highlighted four major weaknesses in the overall institutional structure: duplication of efforts and consultation activities between Red Colombia Compite and the Domestic Agenda since 2004, a low level of activity on transversal and process issues (several of the initial transversal committees were inactive by 2006), excessively informal links with key decision-making bodies (like CONPES and Congress) and weak participation by entrepreneurs, particularly SMES (private sector representation was mostly carried on through business association staff), as well as by several key agencies.⁹ It also concluded that the major process drawbacks were weak execution, followed by weak monitoring of actions and commitments and inadequate impact evaluation¹⁰ (see Figure 2).

⁸ Agenda Interna para la Productividad y Competitividad, CONPES 3297 of 2004

⁹ Like the FDI promotion agency, Coinvertir, absorbed by Proexport in 2003, and the regulatory and supervisory bodies for the financial sector, utilities and social services. However, nearly 160 public agencies were involved in these processes.

¹⁰ It also found specific weaknesses in policy formulation in two areas (firm strategies and technology) and significant weaknesses in regulation in environmental policies.

Figure 2. Weaknesses of the 1998/2006 Process



Source: BOT (2006).

The diagnosis included an extensive survey of participants. In spite of the institutional problems indicated above, participants considered the overall “institutional structure” as fairly adequate (an average score of 3.2 over 5) but the overall strategy and process as inadequate (scores of 2.5 and 2.4). In particular, participants considered that the country did not have a clear and coherent competitiveness strategy and that the Government strategy lacked continuity (score 2.5); that there was a lack of a shared vision across groups on the competitiveness strategy (score 2.2), especially on the part of civil society organizations; that processes were weak (score 2.4), particularly with respect to execution, monitoring and evaluation; and so were information and communications channels (score 2.5).¹¹ The survey highlighted the capabilities and commitment of some government agencies (especially DNP and the Ministry of Trade and its agencies and a few departments and municipalities) and private sector organizations, though not of other actors. In particular, civil society organizations, academic representatives, the ministry of Agriculture and its agencies and most departmental and municipal agencies received low scores on capabilities and commitment.

¹¹ The diagnostic report also benchmarked the Colombian process vis-à-vis other countries (Finland, Sweden, Korea, Ireland, Malaysia, India, Vietnam, Senegal, Turkey, Latvia, Chile, Brazil and Mexico). It concluded that “successful cases” tend to have a simple institutional structure with strong leadership, a focus on firms and synergies between different policies and dimensions of competitiveness, strong Presidential backing, high participation in networks, accountability mechanisms and continuity. Colombia was found to have a relatively sound institutional structure (except for duplications between the RCC and the Domestic Agenda structures, which it urged to be integrated), but relatively weak processes, especially in terms of accountability (including M&E) and focus.

Participants highlighted the adequacy of the organization by productive chains and horizontal networks, though they were more critical about the regional networks, with some exceptions corresponding mostly to the largest Departments and Bogotá. However, another technical evaluation of Competitiveness Agreements led by the Corporación Andina de Fomento (CAF) in 2005¹² had found “satisfactory” only 5 out of 38 competitiveness agreements by productive chains, none of them in the agricultural sector, and none of the horizontal networks (see Table 1).

Table 1.

a. Evaluation of Sector-Level Competitiveness Agreements

Grade	MCIT	MADR
Less than 30	6	5
Between 30 and 60	14	8
Between 60 and 90	5	-
Between 90 and 100	-	-

b. Evaluation of Specialized Networks

Energy	49
Management	48
Finances	43
Work	41
Transport	39
R&D	34
Telecommunications	29
Human capital	24

Source: Corporación Calidad and CAF (2005).

The CAF evaluation of competitiveness agreements included detailed surveys of participants and signatories.¹³ For this purpose, seven out of 41 agreements were selected as representative of different eras and characteristics of sectors, five national and two regional in scope.¹⁴ Opinions, especially those from the private sector, were quite negative about the effectiveness of the agreements (see Figure 3): 68 percent of private sector respondents believed

¹² Evaluation of Competitiveness Agreements by Corporación Calidad and CAF, 2005

¹³ Participants and signatories do not necessarily coincide.

¹⁴ Flowers; Cotton, Textiles and Apparel; Footwear and Leather products; Electronics (regional); Housing cluster (regional); Software; Logistics and Transport.

that the agreements did not provide an adequate base for their respective productive chain’s development. Several operational traits additionally received poor marks, again especially from private sector representatives: insufficient coverage of key topics, poor communications, and a low level of participation by Government officials with decision-making power. Public sector officials, in turn, perceived weak participation and commitment from entrepreneurs, who were represented primarily through business associations. In addition, most participants emphasized the need to establish quantifiable objectives and monitoring and evaluation systems. In spite of this rather negative assessment, there was general support for the objectives of the agreements and for the need of such mechanisms for public/private interaction. As a consequence, the key recommendations of this study were to appoint managers for each agreement, with own budgetary resources, and to establish quantifiable objectives and monitoring and evaluation systems to guarantee continuity and efficacy.

Figure 3. Participants Survey: Aspects Limiting the Effectiveness of Agreements

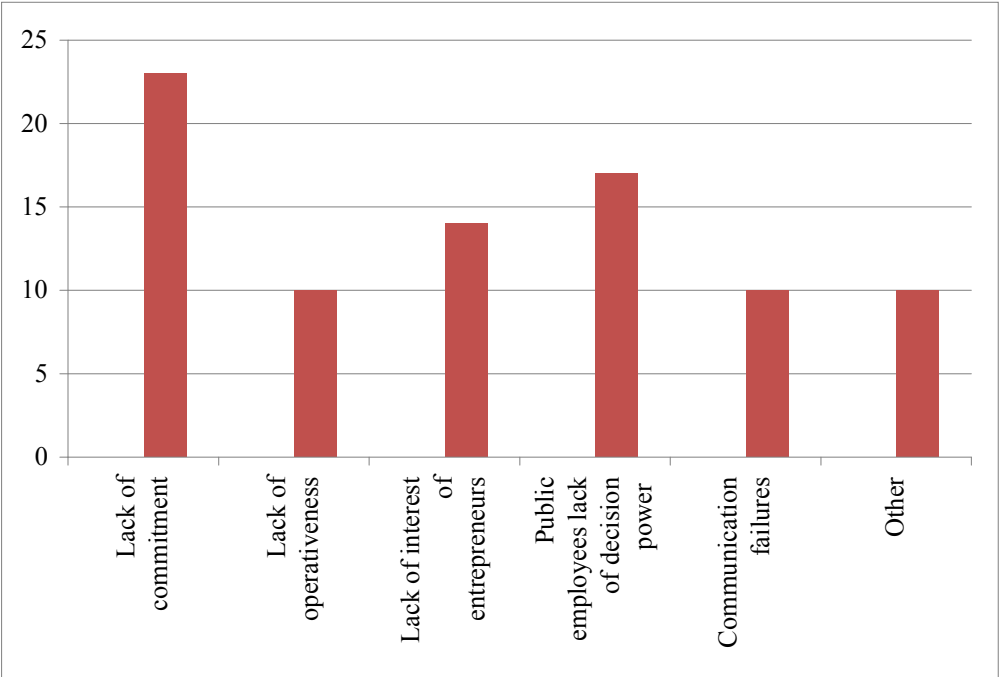
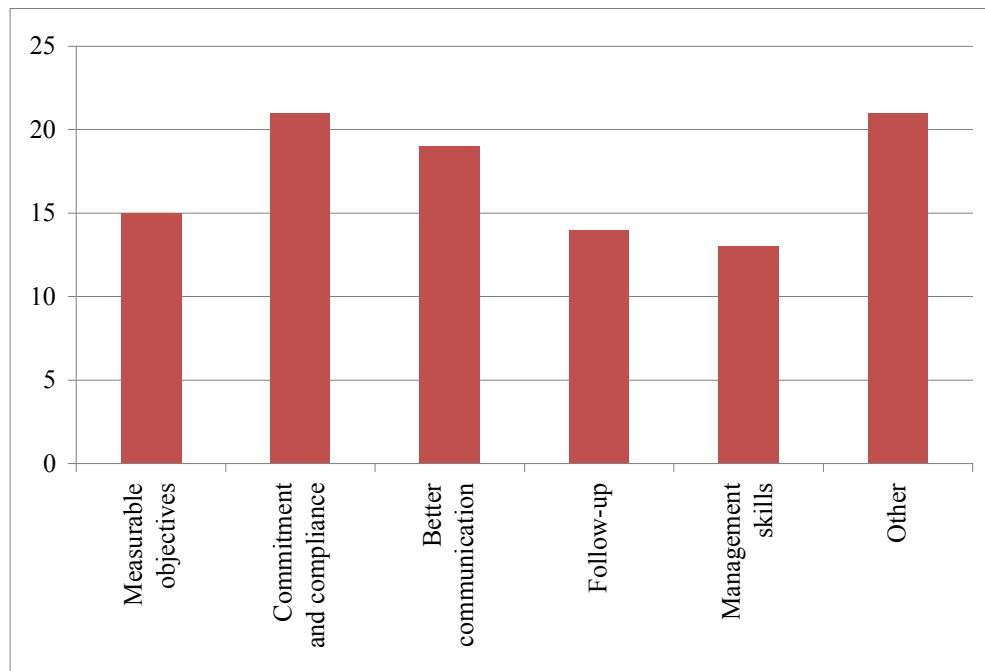


Figure 3., continued



Source: CAF (2005).

2.4 The Development of an Integrated National Competitiveness System from 2006 Onwards

On the basis of these two diagnostics, the Government reorganized the institutional setup and redefined the strategy.¹⁵ A well thought out institutional structure evolved. First, it is a unified structure, coordinated by a national commission for competitiveness (CNC) made up of a balanced representation of public and private key interests,¹⁶ with a public/private operational executive committee,¹⁷ a governmental operational committee and a public/private technical

¹⁵ CONPES (2006) Institucionalidad y principios rectores de política para la Competitividad y Productividad, Policy Document 3439. According to the recommendations of the two diagnostics, the strategy was to be based on focalization of priorities; precise goals and clear evaluation and accountability mechanisms; strong participation of the private sector and co-responsibility with governmental agencies; emphasis on SMEs and development of regional institutions and capabilities in lagging areas.

¹⁶ Eight ministers, the directors of the science and technology agency (Colciencias) and the national training institute (SENA), the presidents of the national federations of Departments and Municipalities, two private sector representatives selected by the federation of business associations, two trade union representatives, the president of the association of universities, and a representative of regional universities and three independent members selected by the president.

¹⁷ Composed of the Presidential Advisor for Competitiveness and Productivity, the Minister of Trade and Industry, the Head of DNP and the President of the Private Council for Competitiveness. Vice Ministers and Heads of key Government Agencies.

secretariat.¹⁸ The CNC established 14 horizontal and 10 vertical technical working groups.¹⁹ Second, unified public/private regional commissions, merging existing ones, were established under the coordination of the Ministry of Trade and Industry and the Federation of Trade Chambers (Confecámaras). Third, a monitoring and evaluation system was designed and is being operated by DNP, with results publicly available through a governmental webpage (SIGOB).

The CNC formulated, and CONPES approved in June 2008,²⁰ a new Competitiveness and Productivity Strategy. The strategy adopted as a basic principle that the competitiveness agenda would be based on productivity increases and not on reduction of labor costs or rent-seeking activities. It also envisaged a State role based on the provision of public goods as key inputs to increase the competitiveness and productivity of the private sector and the promotion of public/private alliances and regional competitiveness dimensions. The main goals would be to guarantee that “by 2032 Colombia is one of the three most competitive Latin American countries”; to achieve a level of income per capita corresponding to a high middle-income country through an economy exporting goods and services with high value added and technological content and a strong investment climate; and to promote internal regional convergence, increased formal employment and sharply reduced poverty levels. It was further noted that productivity increases would have to come mostly by the development of new products and exports. The latter was a conclusion derived from a Hausmann and Klinger study²¹ for the Private Council for Competitiveness.

The new strategy adopted detailed action plans for each of its working groups, with precise products, activities, indicators, goals and responsible Agencies, indicating progress to that date on each of them. The most interesting development to date relates to the Action Plan on developing World Class Sectors, which is discussed in Section 5 below. The SIGOB gives permanently updated information on the development of these Action Plans, as well as on other Government programs.

¹⁸ Composed of the Presidential Advisor for Competitiveness and Productivity, the Vice Minister of Trade and Industry for Entrepreneurship Development, a delegate of DNP and two Vice Presidents of the Private Council for Competitiveness.

¹⁹ See Appendix 2.

²⁰ CONPES, Policy Document 3527 (2008).

²¹ Hausmann and Klinger (2007).

We should highlight the influence of external advisors (from Porter to Hausmann) and institutions (WEF, World Bank, IADB, CAF and USAID) on these developments. In particular, the CNC and CONPES have adopted as explicit goals to improve Colombia's score in the WEF Competitiveness Indexes and the World Bank *Doing Business* Reports. The Ministry of Trade has officials responsible for each set of indicators, who promote agreements among the relevant government units and monitor their implementation. All major cities have prepared action plans based on a sub-national report on *Doing Business* financed by the WB and USAID. Not surprisingly, Colombia has won twice in a row the "prize" of major reformer according to the CDB indicators. Such a strong drive towards achieving improvements in these external indicators stimulates activism and compliance and facilitates monitoring and evaluation, but it can also bias efforts towards low-cost actions that may not yield the greatest benefits. Indeed, there is no way to know at present the actual benefits on TFP increases of a given improvement in one or another of the individual WEF or CDB indexes.

2.5. Two Promising Initiatives

2.5.1 The Private Council for Competitiveness

The creation of a Private Council for Competitiveness in January 2007 signaled an increased degree of commitment by the private sector to the Competitiveness Agenda and could make an important difference going forward in terms of effectiveness and continuity of the PDP process. The Council includes both business associations and selected successful entrepreneurs, committed to the concept that firm productivity is the key to competitiveness and growth, that the State has a purely facilitating role, providing both general and sector-specific public goods, and that public/private alliances are needed to identify and support successful "bets" and emerging clusters, solve coordination problems and overcome bottlenecks. It has close ties to the US Competitiveness Council, which has been its inspiration, and has had Ricardo Hausmann as its main advisor.²²

As part of CNC technical secretariat the Council was very active in the design of the new Competitiveness Strategy approved by CONPES and is pushing its development. It publishes an excellent Annual Report on Competitiveness,²³ which gives an updated diagnosis of national,

²² Regional "product maps", following Hausmann's "open forests" concepts, have been produced to guide selection of growth areas. The potential usefulness of these exercises is still to be established.

²³ The second report was launched in November 5, 2008.

sectoral and regional competitiveness issues and highlights advances and problems in the implementation of the agenda. Its current own initiatives are focused on logistics, informality, tax structure and intellectual property rights. It is also supporting important initiatives such as the establishment of a Labor Observatory, with the Ministry of Education, and an ambitious ITC plan under implementation by the Ministry of Communications. The Council has given public prominence and support to a modern competitiveness agenda, provides a non-official monitoring and evaluating channel and can potentially help to maintain continuity of the strategy.

2.5.2 Business Plans for World Class Sectors

The Ministry of Industry and Trade, with the advice of the consulting firm McKinsey, identified a set of potential emerging world-class sectors for Colombia through a methodology (based on those followed by China, Korea, Dubai, Kuwait, Spain and Ireland) that contrasted global opportunities²⁴ with Colombian relative strengths (sectors with strong local development and/or potential for growth, significant actual export performance and competitive advantages) and weaknesses, according to a host of previous studies.²⁵ A preliminary group of emerging sub-sectors with strong export growth potential was identified for which a more detailed analysis of potential markets and entry barriers was undertaken. As a result, a “short list” of seven sectors was selected: business process outsourcing, software and IT services, health tourism, cosmetics, household appliances, auto parts and pharmaceuticals.

After an open call to these sectors for “sector-level value proposals,” to which six sectors responded, the best two were selected. Detailed Business Plans were elaborated for these two sectors (business process outsourcing and software and IT services), financed by the Ministry of Trade, with support of McKinsey and high industry participation, which were finalized and approved in August 2008. The Business Plans are based on a detailed identification and projection of global and regional market opportunities, benchmarking of Colombian strengths and weaknesses vis-à-vis potential competitors, establishment of goals and an action plan. To take as an example business process outsourcing, 31 required action initiatives were identified, of which 12 were related to skill upgrading, 9 to the regulatory framework, 8 to industry maturing, and 2 to infrastructure improvements. It is estimated that the implementation of this

²⁴ Sectors with high global and regional growth; analysis of strengths and weaknesses of competitors; and identification of key success factors.

²⁵ Porter, Haussman, IDI, Domestic Agenda, Araujo Ibarra, AT Kearney, Universidad del Valle, Colciencias.

plan may generate around US\$1.4 billion in additional exports (out of US\$3.3 billion in additional total sales) and 78,000 new jobs by 2012. Chapter V of this report discusses the Software Business Plan. From a second call for “sector-level value proposals” two additional emerging export “growth” sectors were selected: health tourism and cosmetics, for which Business Plans are being produced following the same methodology.

This program for emerging export “growth” sectors is being complemented by a similar call for proposals to mature sectors with export growth potential. Following a similar methodology, 11 mature sectors with significant export growth potential through innovation and development of new products were invited through their respective business associations to present “sector value proposals”: graphic industries, energy power, siderurgy and metal mechanics, jewelry, textiles and apparel, footwear and leather products, petrochemicals and plastics, fertilizers and pesticides, auto parts,²⁶ biotechnology and industrial and health gases. Seven of these sectors presented proposals that are presently under evaluation. In the case of mature sectors, the Ministry will finance only half of the cost of the elaboration of the Business Plan. A second round for a similar call for proposals in agricultural and agroindustrial sectors is being prepared jointly with the Ministry of Agriculture.

The program was officially launched in October 2008 under the generic name of “Productive Transformation.” The Ministry emphasized in the presentation the differences with traditional industrial policies, specially the fact that it is a competitive program (without arbitrary selection of winners), as eventually the elaboration of Business Plans can be done jointly with any sector that presents a sound “value proposal” and that no subsidies or differential tariffs or taxes are offered. The program has been well received, but it is still too early to be able to predict results or even continuity under the next administration.²⁷

2.6 But Bad Habits Die Hard: The Survival of a Parallel Track

We described above the evolution of a process of policy experimentation and institutional construction for a modern PDP strategy since trade opening in the early 1990s. Although this process has been fraught with inconsistencies, weaknesses and lack of continuity, it appears to be maturing and consolidating into a participative, integrated and operative institutional structure and strategy, which is producing promising initiatives like the pilot Business Plans to achieve

²⁶ This was the second call for this sector.

²⁷ Source: Discussions with Minister Luis Guillermo Plata and his team.

World Class Sectors discussed in the last section. However, rent-seeking is alive and well through parallel traditional tracks, and there are still major questions regarding the extent to which the new process of formulating PDPs actually leads to policy decisions and constraints traditional non-transparent policymaking, and even questions about the continuity of the present institutional setup and policies.

Indeed, though the World Class Sectors strategy emphasizes that subsidies and differential tax rates are not options to be considered within the process, there has been a proliferation of both subsidies and tax incentives within the present administration. The introduction of new tax incentives started timidly during the first Uribe Administration, benefiting a few handpicked emerging “growth” sectors in 2003, such as biofuels (which are further discussed in Section 5) and tourism. In 2004, a generous temporary income tax reduction for investments was established, financed by retained profits and with the stated purpose of stimulating investment. This decision was accompanied by a major public discussion in which many expert voices pointed out that an incipient investment boom was already underway, fueled by a favorable external environment and significant improvements in public order, so that an additional stimulus was unnecessary and rather imprudent given the existing high central government deficit and public debt levels.²⁸ In 2006, the Minister of Finance presented to Congress a bold tax reform proposal that would eliminate most tax incentives and at the same time significantly reduce the corporate tax rate, which was one of the highest in Latin America. The general direction of this proposal received significant support from academia and the media.²⁹ However, to virtually everyone’s surprise the President began to offer not only to keep most existing tax incentives, but also to introduce new ones, during his interventions in sector business gatherings. The tax reform approved was almost the opposite of the initial draft: an even higher tax reduction for investments financed by retained profits became a permanent feature of the tax system and several new exemptions were introduced, much to the regret of the Minister of Finance who, when leaving office, openly criticized the tax reform and said this had been his greatest disappointment. Indeed, since then, tax incentives are openly promoted and defended by

²⁸ See, for example, Fedesarrollo’s *Tendencia Económica*, several numbers. The President consulted the opinion of a group of Ex Ministers of Finance, which was overwhelmingly negative to the proposal.

²⁹ Though there was some opposition to an initial proposal to convert the Corporate income tax into a cash flow tax (permitting full expense of investments and eliminating depreciation allowances and interest deductions and, especially, to a subsequent “hybrid” proposal among these two types of taxes, which would have produced negative marginal investment tax rates.

the President as a key instrument for increased investment and growth and as an essential component of his government's economic policy.

Similarly, in 2007 the government enacted a new regime for Free Trade Zones, through two successive decrees³⁰ based on Law 1005 of December of 2005. Law 1005 permitted the Government to comply with WTO mandates by converting them to general-purpose free trade zones in which firms would be able to import capital goods and inputs free of taxes (tariffs and VAT) and be subject to a reduced corporate income tax rate of 15 percent (less than half the full rate of 33 percent). The decrees extended these privileges not just to existing export promotion zones, but also to a wide variety of permanent or temporary zones, including ports, mining zones and individual projects located anywhere, as long as they exceed minimum investment or employment levels. Even existing firms can be converted to an FTZ if they undertake a significant expansion. The decrees were “negotiated” to make sure that particular investment projects fitted the conditions. In practice, the new FTZ regime is essentially a mechanism to grant tax incentives to large firms in a more or less discretionary way.³¹ The number of FTZs has grown from 11 (see Section 4) to an approved total of 38 (see Table 2).

Entrepreneurs claimed in our interviews with them that these tax incentives do not affect in a significant way their long-term “business plan” (expansions and product diversification). They, of course, admit that they are a welcome addition to their cash flows and that, on occasion, they influence the choice of technology (by allowing them to choose the most expensive, presumably capital-intensive, technology). Furthermore, authorities and beneficiaries are aware that the regime is creating major tax discrimination among competing firms and that the situation will be untenable in the future, requiring a unification of tax regimes. Because of this, all firms benefiting from the new regime have entered into tax stability agreements with the government, which will force the future unification to happen at the reduced rate of 15 percent independently of actual fiscal needs. Finally, as the tax reduction for new investments and the new FTZ regime evolved independently, neither the government nor Congress realized they would be cumulative, leading to several instances of negative marginal rates. This unexpected result is so preposterous

³⁰ Decrees 383 of February and 4051 of October 2007.

³¹ *Economía y Política* 34, Fedesarrollo, 2008.

that the Government has included in a recent draft law an article prohibiting the accumulation of those benefits.³²

As a further example, several agricultural lobbies fiercely opposed granting tariff reductions under an FTA with the United States. In spite of President Uribe's considerable interest in negotiating such a treaty, the government attempted to either exclude or obtain long periods for tariff reductions in several so called "sensitive" agricultural sectors, to the extent that this position significantly delayed final agreements until after Congressional elections in the United States and thus contributed to present difficulties in obtaining approval in the U.S. Congress. In the end, the government attempted to obtain support from agricultural lobbies by promising considerable subsidies through a law called "Agro Ingreso Seguro" (secure income for agricultural producers) to partially or wholly compensate for potential adverse effects of the FTA on those sectors. Ironically, while the treaty has not come into effect and its prospects are rather dim, the "compensation" is flowing generously without clear or transparent criteria. Some evaluations of the programs financed through this law are underway, but they are unfortunately not available at the time of writing.

Table 2. Investments Benefiting from Tax Reductions under the New FTA Regime

Free zones			
	Total zones	Total employment generated	Amount invested (\$mill)
Approved FZ	25	125,022	2,863,280
Approved widened FZ	3	3,050	1,709
Approved Plan Maestro by the Comision Intersectorial. Pending DIAN declaration	10	10,157	6,790,717
Total	38	138,229	9,655,706

Source: Ministry of Industry and Trade.

³² Economía y Política. No. 34. Fedesarrollo. Bogotá, 2008.

It is beyond the scope of this paper to attempt an assessment of these interventions. General expert opinion, even among Government officials—as revealed during the interviews we conducted—is that the allocation of these subsidies represents rent-seeking on a large scale. As an example, in 2006 the Government decided in 2006 to revive subsidies to exports³³ in order to “compensate” for the effects of currency appreciation on selected sectors. Criteria for selecting sectors or fixing the level of the exchange rate over which compensation would take place or amounts involved (4 percent of value of exports) were non-transparent and seemingly arbitrary. The second Competitiveness Report recently launched by the Private Council for Competitiveness highlighted that most of the Agro Ingreso Seguro resources are being used to subsidize credit and hedges (55.7 percent and 8.5, respectively) and to grant direct subsidies and “compensations” (22.8 percent) to specific sub-sectors. The Council’s view is that large and middle-sized producers could access commercial credit and derivative markets without subsidies and that the contribution of occasional direct subsidies and compensations to productivity is highly suspect.³⁴ It implicitly suggests that the latter should be eliminated and the former focused on small producers, and more resources devoted to “public goods” such as R&D and extension services and phytosanitary campaigns.

As a final example, the annual budget is Constitutionally mandated to conform to a four-year investment plan approved by Congress as part of the National Development Plan at the beginning of each Presidential term. The draft of these laws is prepared by the DNP, which was in charge of the Domestic Agenda consultations. Not surprisingly, DNP did its best to reflect the outcome of those consultations in the Investment Plan for 2006-2010. However, there is little evidence that annual budget drafts and approvals actually reflect the Domestic Agenda’s priorities.

As a case in point, as the Domestic Agenda consultations highlighted major transport infrastructure needs, the Planning Department and the private Council for Competitiveness followed up in identifying a set of priority infrastructure projects called “the national roads for competitiveness.” However, neither annual budgets nor transport policies have given high priority to these roads or other primary roads, at least until recently, as continuously criticized by the “Cámara de Infraestructura” and brought out clearly by our interviews with all actors in the

³³ That had been previously dismantled to comply with WTO mandates and as a consequence of the 1999 fiscal crises.

³⁴ Private Council for Competitiveness (2008).

PDP consultation process. Instead, the Ministry of Transport and the budget have given higher priority to an ambitious “Plan 2500” that attempts to build 2500 kilometers of secondary and tertiary roads (which should be carried on by Departments and Municipalities) in a short period of time. It is widely believed that Plan 2500 is, if anything, the currency with which regional and Congressional support was bought for the reelection of President Uribe for the 2006-2010 term. Plan 2500 also lends itself to a large number of small contracts to local contractors that play an important role in local electoral financing. Thus, traditional clientelistic politics and rent-seeking seem behind the partial displacement of “roads for competitiveness” for “roads for governability.” The strength of these clientelistic, rent-seeking, parallel tracks is probably a reflection of the general clientelistic nature of party politics in Colombia. (It is however beyond the scope of this study to explore this or other hypothesis behind this fact.)

Conversely, even if the proposals from CNC have been approved through CONPES 3527 and other policy documents, many participants in the process are somewhat skeptical that such approvals will necessarily translate into full execution and, thus, into actual Government priorities. In interviews conducted, some participants indicated how some key specific actions agreed upon through sector-level Competitiveness Agreements were repeatedly “approved” through CONPES documents during the last three Governments until they were finally executed.³⁵ As indicated above, evaluations conducted in 2006 found that “execution” was the weakest chain in the competitiveness agenda process.

It may be that the new trend towards precise and dated actions and goals and public monitoring through SIGOB may improve actual compliance with CONPES-approved agreements, but this remains to be seen. The same is true for those actions agreed upon in the World Class Action Plans under the Ministry of Trade and Industry that must be executed by other ministries. As mentioned above, this was a major problem for the Competitiveness Agreements signed from 1998 to 2002 under the leadership of the former Ministry of Trade. Though the current Ministry seems to have received commitments of support from two key ministries for the first two pilots (Education and Communications, which are currently led by technocratic ministers), participants in the interviews were skeptical about the potential cooperation of other ministries, notably Transportation.

³⁵ This was the case, for example, of an expansion and upgrade of the Cartagena refinery, which was deemed essential for further development of the petrochemical industry.

All in all, the “new” participative PDP process still appears to be of only marginal importance, as compared to the amount of resources, financial and human, deployed through the traditional clientelistic track. It might be that it is precisely for this reason that the current PDP “process” appears relatively uncontaminated by rent seeking: there are enough opportunities elsewhere to benefit from pork. However, this condition of relative “marginality” also makes it frail. Indeed, the other major concern is about continuity of policies. The account in this section shows how competitiveness policies and institutional structure have been subject to major changes every time a new government takes over. It is thus by no means clear that the current structure and approach will prevail in a future government. Even a change of Minister of Trade (or of presently key allies such as the Ministers of Education and Communications) could considerably weaken the process, as happened with the previous Red Colombia Compite. It could be that the presence of an organized and committed Private Council for Competitiveness this time makes a difference. Admittedly, if current policies can show some important successes, well-documented and evaluated, chances of continuity will increase. However, the jury is again still out in this regard.

2.7 Assessment of Private Participation in Policymaking

Tables 3-5 summarize the answers of firms to the module on PDPs included in Fedesarrollo’s Entrepreneurial Opinion Survey (EOS) in October 2008 for the purpose of this study about their participation in the policymaking processes and their evaluation of the qualities of such processes.³⁶ As shown in Table 3, 30 percent of firms acknowledge having had some participation in these processes. The corresponding figures for large, medium and small firms are 38 percent, 16 percent, and 29 percent, respectively. It is surprising that small firms claim much higher participation levels than medium-size firms, but such a trait is corroborated by other answers to the questionnaire. Participation seems to have increased considerably in the present decade, especially among small firms.

Most firms that have participated in PDP policy making have done so in the context of business associations’ initiatives (16 percent of total firms), and only 12 percent of responding firms have participated in government-sponsored scenarios (5 percent in the Domestic Agenda consultations, 4 percent in negotiations of Competitiveness Agreements, 2 percent in Communal

³⁶Appendix 1 contains a description of the survey and presents a more complete version of these results.

Councils and 1 percent in National Development Plans consultations). Small firms claim more participation than medium size firms through most channels, especially through Domestic Agenda consultations and Communal Councils—where their participation rates exceed even those of large enterprises—with the exception of negotiations of Competitiveness Agreements, which seemed limited to large and medium-size firms.

Given these results, it is not surprising that very few firms rate participation mechanisms as adequate (3 percent out of the 30 percent that participated), especially among small and medium- size firms. Most firms claim that channels are essentially limited to firms represented by a powerful business association (11 percent out of the 30 percent that participated), to large firms (6 percent) or to groups with regional political power (6 percent). In fact, out of the 30 percent that participated, 4 percent claim that there are no effective implementation mechanisms.

**Table 3. Participation in PDP Policymaking
(percentage of total firms in each category)**

	Total		Large		Medium		Small	
	Yes	No	Yes	No	Yes	No	Yes	No
Participation in the formulation of policies	30	70	38	63	16	84	29	71
If affirmative:								
Participated before 1991	11		18		3		0	
Participated in the 90's	14		20		3		9	
Has participated in the present decade	27		33		15		26	
Participation in the context of:								
Negotiations of Competitiveness Agreements	4		5		3		0	
Discussion of Domestic Agenda	5		7		0		10	
Formulation of National Development Plan	1		2		0		0	
Communal Councils	2		2		0		5	
Business association initiatives	16		20		11		14	
Other	2		2		1		0	
Participation mechanisms are:								
Adequate because the government provides sufficient spaces for participation	3		6		1		0	
Only for firms represented by a business association	11		13		7		9	
Only for large firms	6		6		3		13	
Only for groups with political power in the regions	6		7		3		4	
Not working due to lack of mechanisms to implement the policies formulated.	4		5		1		4	

Source: Fedesarrollo EOS October 2008.

Table 4 shows a breakdown by main interlocutors. As observed, lobbying in Congress is quite common to all firms (around 18 percent of total). It is therefore surprising that the President has been the direct interlocutor in half of the cases in which firms have met with executive officials. Firms claim much higher effectiveness of interactions with the President than with other interlocutors. Large enterprises, as expected, use more varied channels than other firms (including technical public officials, as well as professional lobbyists and “other channels”). These “other channels” are also reputed to be highly efficient in obtaining desired results.

Table 4. Participation in PDP Policymaking by Main Interlocutor (percentage of total firms in each category)

	Total	Large	Medium	Small
One or more congressmen	18	21	12	19
The President	5	7	2	5
A Minister or Vice-minister	3	4	2	5
Other public officials	2	4	0	0
No response	2	3	0	0

Source: Fedesarrollo EOS October 2008.

Table 5. Interaction Effectiveness, by Interlocutor (%)

	Successful: a similar policy was implemented	Moderately successful: a similar policy was implemented	Moderately successful: a compensatory policy was implemented	Not successful: the policy request was denied
One or more congressmen	25	25	25	25
The President of Colombia	39	50	11	0
A Minister or Vice Minister	20	29	34	17
Other public officials	23	15	15	46
Other channel	38	25	25	13

Source: Fedesarrollo EOS October 2008.

In conclusion, firms’ participation in PDP decision-making processes appear to have increased substantially in the present decade, especially for small firms, thanks to the broad Domestic Agenda consultation process and frequent Communal Council meetings presided by the President himself. Business association initiatives (such as annual assemblies and public specialized events, where the President and high public officials usually attend, and organized private meetings with authorities), however, continue to be the main individual channel of participation. Large firms use a wider variety of participation channels, including hiring

professional lobbyists, “influential” persons and direct lobbying. Thus, in spite of increased participation rates, most firms, specially small and medium-sized ones, feel that government-sponsored channels are still inadequate, as they are open mostly for large firms, powerful business associations or groups with local political power. These conclusions were broadly supported in our direct interviews.

3. Analysis of the Current PDP System

3.1 Theoretical Background

The theoretical justification for industrial policy is not a settled question. The standard notion is that governments intervene to alter the structure of production towards sectors with greater prospects, to attain growth levels that would not be attained, in the absence of intervention, by a typical process of industrial evolution. There is a considerable amount of literature on industrial policy, with divergent views. Part of it explores the empirical relevance of market failures that would justify industrial policy, while another part debates if government failures from lack of information and badly aligned incentives make it impractical to engage in industrial policy even in the presence of such failures.

Harrison and Rodríguez-Clare (2008) argue that the standard model of industrial policies is not always useful as a guide for policy in less developed countries. When there is a latent or dynamic comparative advantage associated with local externalities that increase with the size of the industry³⁷ and there is a specific coordination failure preventing it from being exploited, temporary protection (or a direct subsidy) may turn that latent comparative advantage into an effective one. This is the case for infant-industry protection. Such a policy can be welfare-enhancing if the discounted future benefits compensate for the present costs of protection (or if the less stringent condition is met that the protected sector can eventually survive international competition without protection). In absence of a latent comparative advantage, industrial policies aimed at sectors likely to have Marshallian externalities can still be justified, under the condition that there are rents associated with the advanced sector, or that there are inter-industry externalities such that having a large advanced sector increases overall productivity.

³⁷ Marshallian externalities arising through localized industry-level knowledge spillovers, input-output linkages together with transportation costs and labor pooling.

But agglomeration effects may depend on the way production is carried out, and externalities may not be intrinsic to sectors but to the way in which they are organized. In this case, output reallocation across sectors is not enough for productivity enhancement. When there are coordination failures that do not disappear as a sector becomes large, protection and subsidies fail, and policies of collective action are called for. In this context, sectors that merit special consideration for PDPs would be “ones that have large opportunities for productivity-enhancing collective action, or that have high world demand relative to the combined size of countries that have achieved such collective action,” and the appropriate policy interventions are focused not on the sector or industry itself, but on the activity or technology that produces the characteristics of the coordination failure. This holds true even if the ultimate target is a particular sector.

Also, since diversification of the productive structure is a way of increasing productivity, policies to encourage discovery (and through it, diversification) are desirable. Hausmann and Rodrik (2003) argue that countries do not know their cost structure, so they do not know the goods in which they have a comparative advantage, and this must be discovered through costly experimentation. Because this is plagued by information externalities, it has social benefits higher than the private benefits it generates, so the market by itself leads to sub-optimal levels of discovery and diversification. Policy interventions once more should target activities rather than sectors per se.

Rodrik (2004) emphasizes that the task of industrial policy is as much about eliciting information from the private sector on significant externalities and their remedies as it is about implementing appropriate policies. Identifying the appropriate policy outputs depends on the opportunities and constraints that are identified through a deliberative process in each particular case. Design principles for adequate industrial policy include, however, providing incentives only to new activities (i.e., products that are new to the local economy or new technologies for producing existing products); having clear criteria for success and failure of promotion efforts so that failures do not become entrenched; including built-in sunset clauses; targeting activities rather than sectors; and ensuring subsidized activities have a clear potential for spillovers.

Finally, there are government failures and institutional shortcomings that are often a fundamental stumbling block and can be major constraints on economic growth. While direct action to solve them would be the first best route, there are often political economy constraints

that make that difficult. When this is the case, “second best” compensatory interventions in their place are preferable to doing nothing.

This literature provides elements useful for analyzing the quality of PDPs in Colombia from the point of view of their design and the rationales that support them that are used in the following chapters in the analysis of specific policies. This chapter starts by characterizing the Colombian PDP system according to the degree of transversality of policies and programs and to the shape in which they materialize (as public goods or as direct market interventions), and investigates to what extent PDPs available are perceived by the private sector as addressing actual market failures or other restrictions to investment.

Figure 4 below presents a classification of PDPs in place according to their degree of transversality and to the shape in which they materialize (as public goods or as direct market interventions).

Figure 4. PDP Classification Matrix

		Transversality	
		Horizontal	Vertical
	Public input		Business plans for selected sectors. Services provided by sector specific public-private funds partially financed by compulsory contributions from producer (agricultural sectors).
	Market intervention	Tariff exemption for imported machinery VAT exemption for imported machinery VAT exemption for industrial machinery Deductibility of fixed assets investments from taxable income Subsidized financing to SMEs Cofinancing of business startup projects and of technological innovation projects to SMEs Facilitation of access to credit through guarantee system Export promotion policies. Financial support for R&D projects and R&D training. Professional and technical training (skill specific)	Income tax exemptions for selected sectors Tariffs VAT exemption for industrial machinery Band tariff system for selected agricultural crops and agroindustrial sectors. Price support schemes to selected agricultural and agroindustrial sectors Direct subsidies to investments in agriculture. Direct compensation for exchange rate fluctuations to selected exporting sectors. Professional and technical training (sector specific) Business plans for selected sectors. Financial support for R&D projects and R&D training (sector specific)

Some items appear in more than one quadrant. This is the case, for instance, of professional and technical training offered through SENA (the Spanish acronym for Colombia's worker training institute) to workers without distinguishing among sectors of employment, and training also offered through SENA to workers of selected sectors. These types of training differ to the extent that the former is intended to strengthen work skills that are common to different types of labor and will eventually allow workers to reallocate across productive sectors (e.g., learning English) while the latter is intended to provide sector-specific skills (e.g., particularities of cotton). We consider this item belongs in both quadrants since, depending on the form it takes, the market failures it addresses and the incentives it provides are not the same. For similar reasons, financial support for R&D activities also appears in more than one quadrant. While Colciencias allocates resources for R&D across sectors, usually through competitive processes, on occasion it also targets specific sector-specific R&D developments. Moreover, there are institutions that channel R&D resources to specific sectors, like Corpoica, created to promote R&D in agriculture.

We have also classified Business Plans for selected sectors in both the public input and market intervention quadrants of sector-specific PDPs. As mentioned above, these are new instruments developed jointly by the Ministry of Industry and Trade and sector representatives at the request of the private sector, intended to develop a long-run strategy for the sector and to commit both public and private actors to actions directed towards obtaining specific objectives. So far, Business Plans for the Software and Business Process Outsourcing sectors have been developed, and Business Plans for the Cosmetics and Medical Tourism sectors are underway. All actions agreed upon in these plans are sector-specific and in some cases include direct provision of public inputs.

3.2 Perceived Market Failures and Other Restrictions on Investment

In this subsection we explore private sector views on the most widely perceived restrictions on investment and the adequacy of the policies available to solve them, using two sources of information: a database containing the record of the interaction of government authorities and private sector representatives in the context of the Domestic Agenda for Productivity and Competitiveness,³⁸ and the results of a special module of Fedesarrollo's Entrepreneurial Opinion

³⁸ The database of the Domestic Agenda was available from the National Planning Department (DNP). The research team coded needs and policy requests for the purpose of this study.

Survey (EOS) on PDPs, prepared for this study. Appendix 1 describes these data sources more thoroughly and presents summary tables of their results.

3.2.1 Domestic Agenda

The Domestic Agenda for Productivity and Competitiveness was created in 2004, under coordination of the National Planning Department, with the purpose of defining short-run and medium-run plans, programs and projects to “take advantage of the opportunities and mitigate the risks associated with increased integration under the Free Trade Agreement with the U.S.” (under negotiation at the time). It relied for policy design upon dialogue with all interested public and private actors, usually represented under organized associations.³⁹

The most striking result of the record from this interaction is the prevalence of perceived government failures (52 percent of all responses).⁴⁰ The three problem categories ranking next, however, all point to coordination failures preventing firms from gaining access to new markets and new business opportunities; they represent about 30 percent of responses. Poor access to technological innovation and insufficient human capital follow, each accounting for around six percent of response. Accordingly, the policies or courses of action requested by the private sector as potential solutions to their perceived problems include institutional development in the first place. Requests to strengthen cooperation strategies, and help in the development of commercialization channels, follow in importance.

A revision of the private sector’s claims in the context of the Domestic Agenda shows that the most required policy efforts fall largely in the quadrant of horizontal public inputs, which lie beyond the scope of the present study. These include institutional strengthening, development of inter-institutional programs, red tape reduction, improvement of transport infrastructure and logistical capacity, development of information systems, and improvement of basic education—all typically horizontal policy areas. While aspects of these inputs can be more vertical in nature, the most salient problems identified by the private sector in the context of the Domestic Agenda call for solutions that are not sector-specific in principle. The responses also show that export promotion policies designed to facilitate access to information of new markets,

³⁹ Twenty-one ISIC 3-digit sectors, 11 from manufacturing and 10 from services, participated in the Domestic Agenda dialogue roundtables.

⁴⁰ The highest concentration of complaints occurs in the category of “Regulatory instability / inadequacy.” The 52 percent statistic results from adding to these the responses under “Weak or lacking institutions,” “Poor or insufficient infrastructure services,” and “Insufficient quality control and certification.” Interestingly, only 0.6 percent of the participants in the dialogue tables point at National security as a limiting factor for their activity.

commercialization channels, and international quality standards are policy instruments that address problems clearly identified by the private sector and associated with market failures. To that extent they represent good policy design. This is also true of policies for education/training improvement (both skill and sector specific) and policies for technological improvement.

3.2.2 Fedesarrollo's Entrepreneurial Opinion Survey (EOS)

Perhaps due to the context in which the questions are posed and in the way they are framed, the assessment of perceived problems, obtained by means of the PDP module added to the EOS in October 2008, provides a different picture of the private sector's greatest concerns, with "high taxes" and "high costs of financing" coming up more frequently⁴¹ (see Table 6). Both sources coincide, however, in singling out inadequate infrastructure as one of the most important restrictions facing productive activities, and in assigning significant weight to problems arising from government failures; 30 percent of all responses fall in this category.⁴²

Table 6. Perceived Restrictions on Productive Investment (percentage of total responses)

Restrictions to productive investment	All	Large	Medium	Small
High taxes	19	19	18	21
Poor or insufficient infrastructure services	16	18	15	9
High cost of financing	15	14	15	22
High input costs	9	10	8	6
Poor or insufficient human capital	7	6	7	18
Difficulty to access international markets information	6	4	8	6
Uncertainty about appropriability of returns due to regulatory instability	6	7	3	3
Lack of risk capital resources	4	4	4	4
Uncertainty about appropriability of returns due weak competition policy	4	4	4	3
Labor market rigidities	4	3	7	1
Uncertainty about appropriability of returns due to National security problems	4	5	2	0
High costs from red tape and licenses	3	3	3	3
Poor access to financing due to excessive collateral requirements	2	2	2	3
Difficulty to comply with quality standards in international markets	2	1	3	0
	100	100	100	100

Responses to the EOS provide support for policies designed to lower the costs of financing for all firms, and particularly for smaller firms, for which costly financing is a relatively more important restriction (replies of small firms fall in this category 22 percent of the time, compared to 15 percent for all firms). This is probably associated with the fact that markets

⁴¹ Potential explanations for the differences are provided in Appendix 1.

⁴² In addition to lacking infrastructure, problems categories taken into account in this statistic include weak competition policy, regulatory instability, National security and high costs from red tape and licenses.

fail to identify good risks among small players with no previous banking history and as a result small firms often obtain financing, when they do, from sources outside the financial sector and/or at higher costs. Responses to the EOS do not, however, justify sector specific tax cuts or tax cuts privileging particular types of firms. The results obtained instead support lower tax rates for all firms.

The EOS shows an increasing use in the 2000s of policy instruments that target information and coordination failures preventing entry into new markets⁴³ (market information, support for participation in fairs and events and for contacts with potential clients). Use of tax breaks and exemptions is also more pervasive than in previous decade, as is participation in quality certification programs. This reflects fairly well the emphasis of the policy supply in recent years. Most firms taking advantage of the policy instruments available are, however, medium and large firms. Interestingly, small firms show above average participation in programs facilitating access to collateral.

When asked to rate the policy instruments available, on average 40 percent of firms declare to be unsatisfied (see Table A1.). They consider the PDP supply to be inadequately designed and/or poorly implemented. Ratings vary somewhat across both instruments and firm sizes, and fare best for quality certification, phytosanitary certification and red tape reduction programs. Respondents who were active before the 1990s, however, evaluate most PDPs better after 2000 than in previous years, apparently reflecting the government's relative success in adjusting its policy supply to more adequately match the needs of the private sector. These results must be taken with caution, however, since the private sector can assign a good grade to a policy instrument for a reason unrelated to good policy design. For example, firms will tend to grade generously any policy that improves their cash flows (and their internal rate of return), regardless of whether it is the correct response to an identified market failure. This probably explains both the improvement in the evaluation of corporate tax reductions and exemptions, which have been widespread since 2002, and the deterioration in the evaluation of Tax Reimbursement Certificates for Exporters (CERTs) that were reintroduced in 2002 after being suspended, but are now smaller than they used to be.

⁴³ Market information, and support for participation in fairs and events, and for contacting potential clients.

4. Horizontal PDPs

Colombia has had a long history of horizontal PDPs, mostly in four areas: export promotion, support to SMEs (particularly through access to credit), skill training and innovation. This section examines the evolution of stated objectives and theoretical conception behind the interventions, the design and use of instruments and evidence from previous studies on their impact. In addition, it examines recent evidence on use and users assessment of adequacy and impact of these instruments based on answers to the Fedesarrollo Entrepreneurial Opinion Survey (EOS) conducted for this study; on Foreign Banks, Credit, Interest Rates, Financial Shocks and promotion instruments collected from primary sources;⁴⁴ on access to credit by SMEs from the ANIF SME Survey, and primary data collected from the Superintendencia of Financial Institutions; and on innovation support instruments from Colciencias and other sources. Finally, it summarizes econometric evidence from previous studies on the impact of export promotion instruments (mostly from studies before 1991) and presents some updated estimates

4.1 *Export Subsidies and Promotion*

4.1.1 *Rationale for and Evolution of Support Instruments*

Colombia has had a long history of export subsidies and promotion schemes, as has been the case in most other LAC countries. The rationale, choice of instruments and design criteria have varied over time.

Several instruments designed before trade opening were basically geared to avoid or compensate for excess costs imposed by protectionist policies under the ISI strategy and for other “government failures” in the spirit of second-best policy. This was particularly the case for the following initiatives:

- Plan Vallejo, a system for input duties drawback instituted in 1959 and still in use, applicable to all export sectors. It is a relatively high transaction costs system and is thus in practice mostly used by large firms in sectors that are intensive in either imported capital goods or intermediate inputs. It has been broadened over time to services sectors and fine tuned to avoid discrimination against national producers competing with imports (by including an imputed

⁴⁴ Ministry of Industry and Trade, Bancoldex, Proexport and DIAN.

- CAT (Certificado de Abono Tributario), a subsidy proportional to exports gross value introduced in 1967. This subsidy applied initially to all non-traditional exports with a basic rate of 15 percent, and its explicit rationale was to compensate for the biases against non-traditional exports that resulted from import substitution policies.⁴⁵ As a consequence, firms benefiting from Plan Vallejo did not benefit from CAT. CAT was afterwards converted into CERT (Certificado de Reembolso Tributario) with differential rates by sector, intended to approximate the value of taxes paid in inputs (to make it more compatible with WTO regulations). The average rate was reduced in the 1980s, and further in the 1990s, until it was basically eliminated in 2002, both as a consequence of fiscal stress and to comply with the WTO agreement on subsidies. It was temporarily revived in 2007 to compensate some sectors for currency overvaluation. In practice, CERT rates have been rather arbitrary, responding to a combination of sector-level rent-seeking pressures and fiscal constraints.
- Export Free Zones (EFZs), instituted by Law 109 of 1985. As in other countries, EFZs were thought of both as compensating for government failures (reducing transaction costs, avoiding tariffs on inputs and benefiting from a stable regime) and outright incentives (income tax exemption). As discussed below, EFZs never covered a high proportion of exports, as in other countries. EFZs were converted in 2007 to general purpose Free Trade Zones, in order to adapt to WTO agreements but also to institute a preferential tax regime for large investments, whether oriented to domestic or foreign markets, as discussed above.

However, even as early as 1967 an Export Promotion Fund (Proexpo) was created to help solve two kinds of perceived market failures.⁴⁶ The first kind were those associated with coordination problems and entry barrier costs related to gathering of external market

⁴⁵ See Perry (2008).

⁴⁶ See Perry (2008).

information, identification of new export opportunities and opening of new markets for existing or new export products. As discussed in Section 3, the fact that “first movers” have to bear these market development costs and risks, while followers can benefit freely from first mover successes or failures (e.g., benefit from significant externalities), leads to a clear-cut case of an important market failure: aggregate underinvestment in developing new exports or penetrating new markets, which has been widely recognized in the recent technical literature.⁴⁷

The second perceived market failure that Proexpo was supposed to solve was related to access to credit issues. In particular, the lack of adequate access to export and long term credit, in terms comparable to competitors from elsewhere, was perceived as a limitation for export growth and diversification, beyond the capacity of individual exporters to overcome. It is debatable to what extent this problem of an “uneven playing field” arose from government failures at home (insufficient domestic financial market development due to poor policies) and abroad (official subsidized credit to exports) or from true market failures (the fact that credit access by a particular exporter does not depend on its intrinsic creditworthiness but on overall country risk). In any case, it does seem clear from most available studies that access to low-cost export (and investment) credit played an important role in facilitating non-traditional export growth⁴⁸ and that there was a need for this kind of intervention. What was more debatable was the early use of public funds and Central Bank credit to extend subsidized credit to exporters, but these features of Proexpo were abandoned in 1991.

Indeed, the Fund, under Central Bank management, was initially financed by an additional 1 percent import surtax (increased to 4 percent in 1974) and access to Central Bank rediscount facilities. Proexpo supplied subsidized credit to exporters and trade-related information to potential exporters, promoted and supported market contacts, organized trade promotion events in Colombia and elsewhere as well as trade missions and attendance of actual and prospective exporters at international fairs. It also, on occasions, subsidized transport and insurance costs for exporters in a given sector.

In 1991, Proexpo was split into two independent agencies: Bancoldex (an Export Bank) and Proexport (an Export Promotion Agency). This reform was prompted both by specialization

⁴⁷ See recent analytical contributions supporting the existence of market failures in these areas in Imbs and Warciagi (2003); Hausmann and Klinger (2006); Hausmann and Rodrik (2003); Harrison and Rodríguez-Clare (2008); Lederman and Maloney (2007); and De Ferranti et al. (2002).

⁴⁸ Villar (1992).

needs and the Constitutional Reform of 1991, which prohibited the Central Bank from continuing to extend development credit through rediscount facilities. Bancoldex was consequently organized as a public commercial bank, which would be managed in commercial terms without receiving budgetary or monetary subsidies apart from its initial capital base. It is reputed to have been a well-run bank, so much so that in 2003 the Government decided to liquidate the former Industrial Promotion Institute (IFI) and transfer its standing credit lines to Bancoldex. Bancoldex, in agreement with the Government, cancelled all existing IFI credit lines except those geared to SME finance, which have been expanded substantially from there on, becoming the main public credit support agency for SMEs, as indicated in Subsection 4.1.3 below. Overtime Bancoldex developed other financial instruments for exporters, such as a limited export insurance scheme and currency swaps. Currency swaps for agricultural exporters have received significant public subsidies in recent years through the Ministry of Agriculture, a feature that has been subject to criticisms (see Chapter 2).

Proexport was given an initial endowment and has received limited budgetary support. It is also reputed to be a well-run agency and existing studies have found robust evidence of a positive impact of its services on export growth, especially export product diversification.⁴⁹ Because of this success and disappointment with the performance of the FDI Promotion Agency (Coinvertir), the Government decided in 2005 to liquidate the latter and transfer its responsibilities to Proexport, expecting to capitalize on potential synergies between FDI and export promotion activities.

Finally, while there may be some market failures that justify Bancoldex offers of export insurance and currency hedges to exporters, it seems difficult to justify the recent liberal use of budget subsidies for hedges in favor of some sectors, as mentioned in Section 2.

Table 7 summarizes an estimate of the equivalent value of several export promotion instruments from 1967 to 1992 (except for EFZs and Proexport services) as a percentage of total non-traditional exports value. The total equivalent subsidy was above 20 percent from 1967 to 1974 (peaking at about 27 percent in 1972 and 1973), mostly due to the high CAT average rates, and to the equivalent subsidy of “*reintegro anticipado*,” a sort of exchange rate subsidy that was in effect until 1975. Between 1975 and 1981 CAT rates were drastically reduced to an average ranging from 4.5 percent to 7.5 percent. The total equivalent subsidy fell from 1975 to 1977 (to a

⁴⁹ See Volpe and Caraballo (2007).

range between 10 percent and 13 percent), rose again to around 15 percent from 1978 to 1981, due to a rapid increase in subsidized credit, and increased once more to a range of 24-27 percent between 1983 and 1985 (years in which Colombia was close to a currency crisis) as CAT rates were augmented to averages of 16 percent in 1984 and 18 percent in 1985.⁵⁰ From 1986 onwards the equivalent total subsidy went down gradually, reaching 7.9 percent in 1992 (and was kept below this level during most of that decade) as both CAT rates and subsidized credit receded. Plan Vallejo's effective subsidy was equivalent to approximately 1.5 to 2.5 percent for most of the period, except 1986-1989 when tariffs were considerably increased as one of the measures to contain the currency crisis, and came down again in 1991. Although we do not have similar estimates for implicit subsidies of these export promotion instruments from 1992 onwards, we do know that they have been lower than the estimated 1992 value. Indeed, as mentioned above, CERT rates were kept low during the 1990s and then virtually eliminated by 2003, to be temporarily revived at a 4 percent value for some exports in 2007. Plan Vallejo implicit subsidies, however, show an increasing tendency after 1993, and the use of public funds or Central Bank credit to extend subsidized credit to exporters was eliminated in 1991. In what follows we present the evolution of coverage rates of export promotion instruments.

⁵⁰ In 1984 rates of 30% and 20% were in effect for 259 export products and for 108 products, including most of agricultural exports, respectively.

Table 7. Export Incentives, 1967-1992

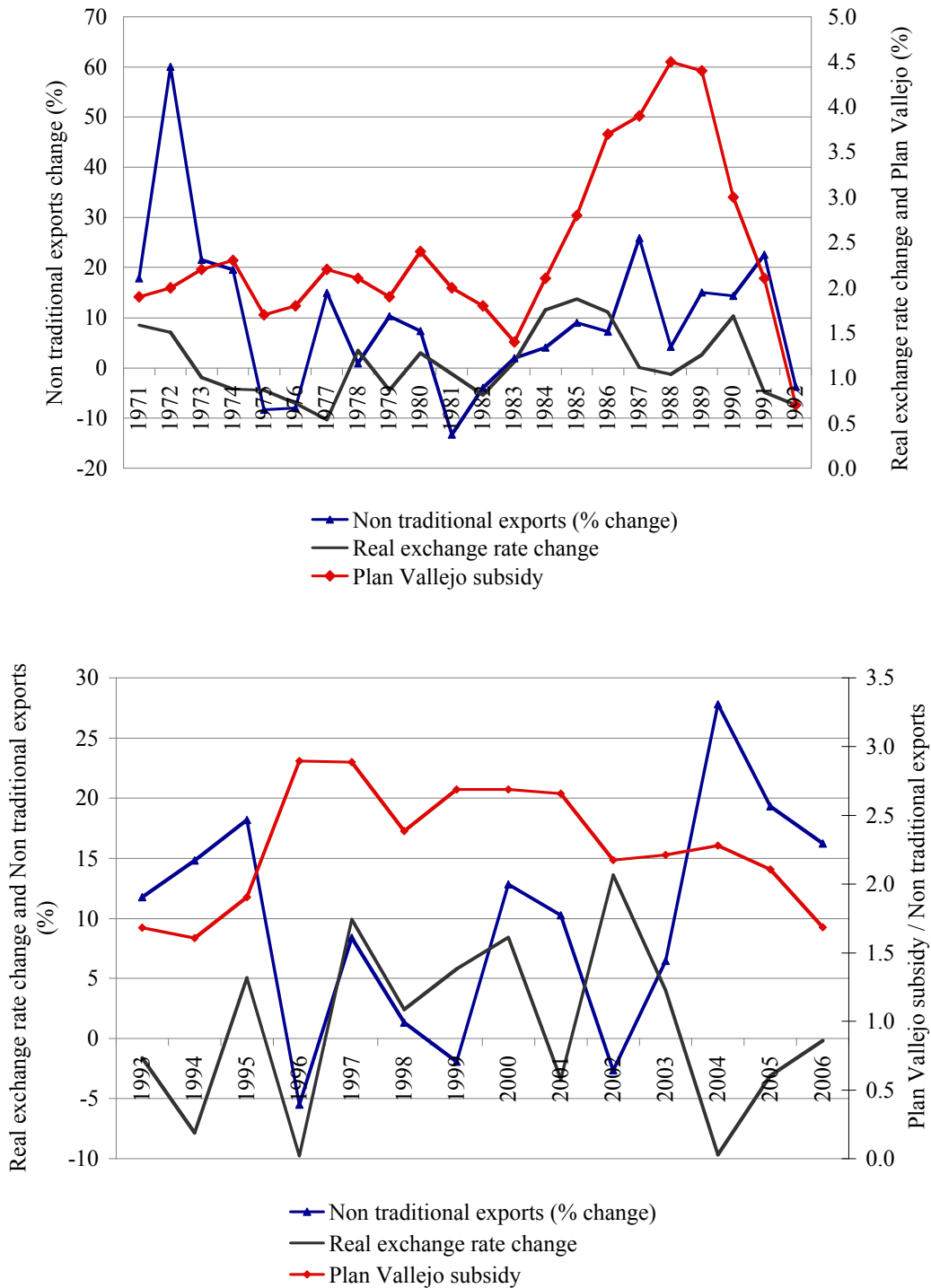
year	CAT	Plan Vallejo	Proexpo credit	Exchange rate subsidy	Total	REER	REER for non-traditional exports
1967	15.2	1.9	-	6	23.1	76.1	82.9
1968	15.1	2.2	-	3.9	21.2	84	90.1
1969	16.5	1.3	-	1.4	19.1	85.7	90.3
1970	15.7	2.5	-	1.6	19.8	90.3	95.7
1971	16.3	1.9	-	4.3	22.6	95.8	103.9
1972	18.4	2	0.5	6	26.8	99.2	111.3
1973	21.5	2.2	1.1	1.9	26.6	97.5	109.2
1974	19.9	2.3	1.3	0	23.5	95.7	104.6
1975	7.4	1.7	2	1.9	13	100	100
1976	5.8	1.8	1.8	0.8	10.2	95.4	93
1977	4.4	2.2	3.4	-	9.9	85.7	83.4
1978	6.3	2.1	5.7	-	14.1	85.5	86.3
1979	7.2	1.9	5	-	14.1	81.7	82.5
1980	6.9	2.4	5.7	-	15.1	83.5	85
1981	7.6	2	6.8	-	16.4	81.6	84
1982	8.8	1.8	8.2	-	18.8	75.6	79.5
1983	11.9	1.4	10.3	-	23.7	73.6	80.5
1984	15.8	2.1	9.2	-	27	79.9	89.8
1985	18.2	2.8	5.4	-	26.4	91.4	102.2
1986	11.6	3.7	3.1	-	18.4	108.5	113.6
1987	8.6	3.9	3.1	-	15.6	111.2	113.7
1988	8	4.5	1.6	-	14.1	111.3	112.3
1989	8.3	4.4	2.1	-	14.8	113.5	115.3
1990	8.2	3	1.5	-	12.8	127.4	127.2
1991	7.8	2.1	0.7	-	10.6	123.7	121.1
1992	6.2	0.7	1.1	-	7.9	117.5	112.2

Source: Ocampo and Villar (1993).

4.1.2 Evolution of Individual Instruments

Figure 5 shows an estimate of PV equivalent effective compensatory subsidy for the periods 1971-1992 and 1993-2006, plotted against the growth of non-traditional exports. The value of the effective subsidy appears to have been approximately constant from 1971 to 1983; increased substantially after that date as tariffs were raised to help cope with the currency crisis of 1983; and dropped significantly from 1991 onwards as tariffs were sharply reduced during trade opening.

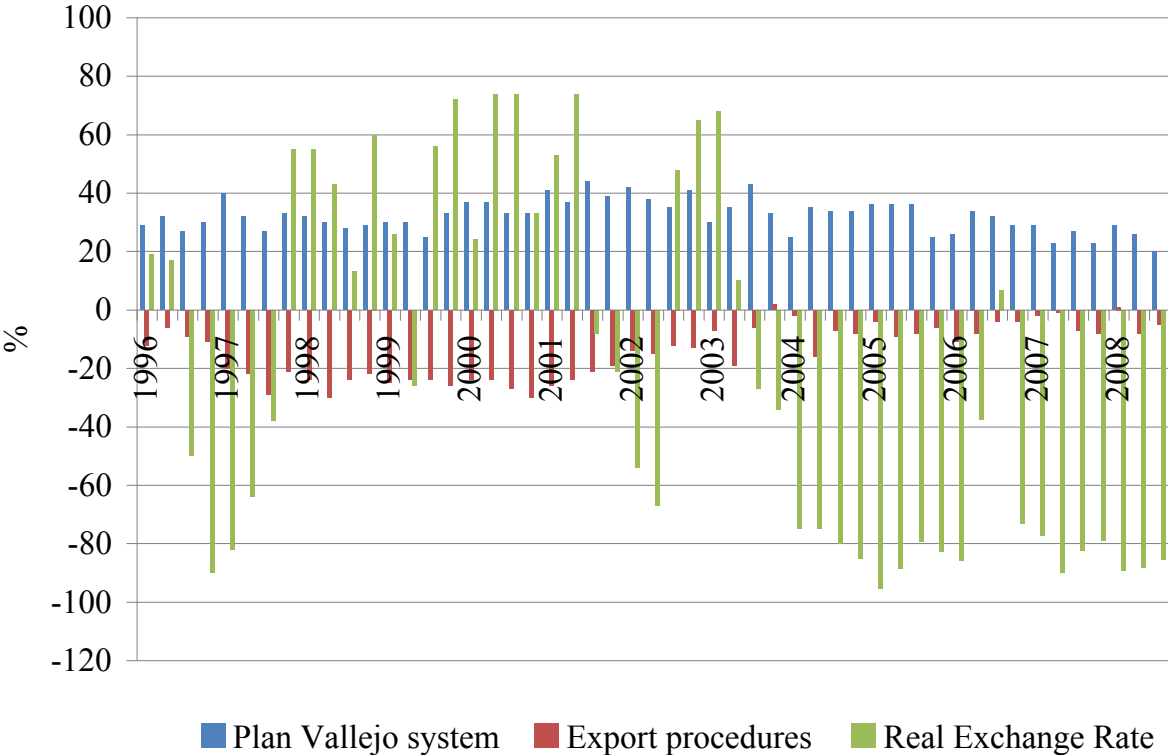
Figure 5. Plan Vallejo Compensatory Subsidy and Non-Traditional Exports Growth



Source: Urrutia et al. (2001) for 1971-1992, Dirección de Impuestos y Aduanas Nacionales de Colombia (DIAN) and calculations from the authors for 1993-2006. Plan Vallejo data for the 1993-2006 period includes all imports entering under Plan Vallejo exemptions.

In spite of the fact that there has been a VAT rebate for exports since 1974 and tariffs on manufactured inputs and capital goods have been relatively low since, around 20 to 30 percent of exporters still have a favorable view of the Plan Vallejo drawback system (see Figure 6). Presumably this is due not just to the exemption of tariffs on inputs, especially capital goods, but also to the simpler import procedures under PV and the financial costs incurred outside the PV (VAT rebates on inputs and capital goods are recovered with a delay).

Figure 6. Most Favorable and Unfavorable Policies for Exports



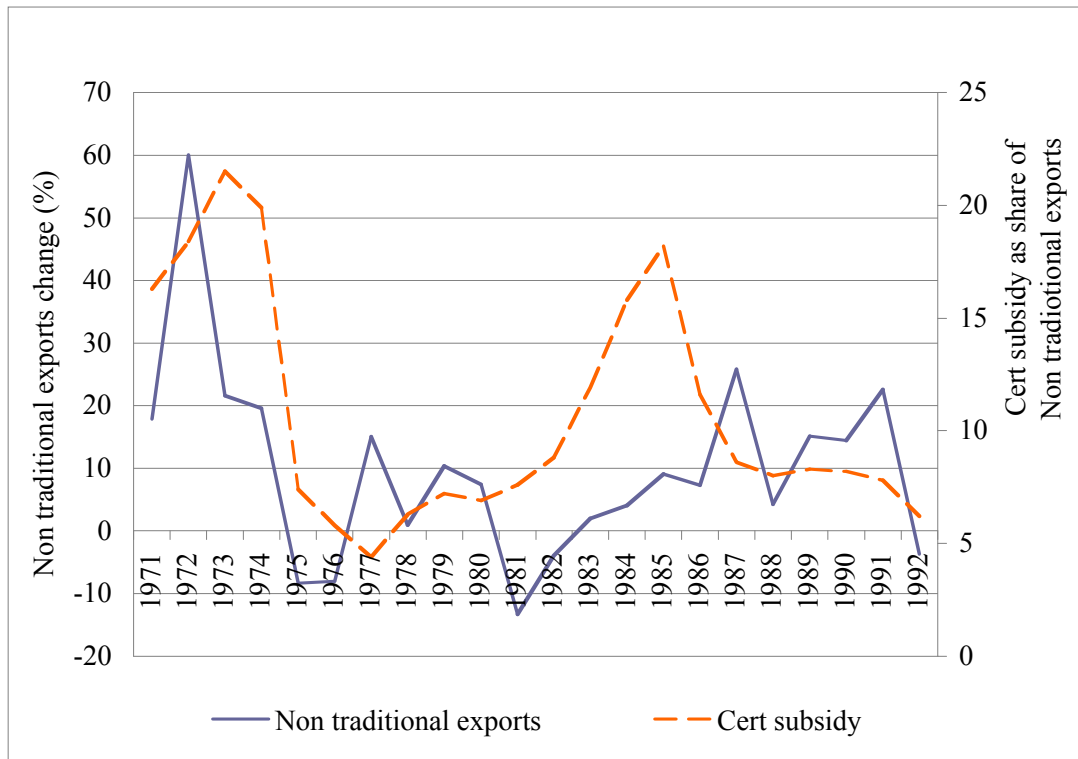
Source: Fedesarrollo EOS and authors' calculations of authors: difference between percentage of favorable and unfavorable answers.

Plan Vallejo has been found, though, to be accessible mostly to large permanent exporters, as transaction costs related to registration and approvals are non-negligible. Further, they appear to have been relatively concentrated in capital-intensive sectors such as mining, chemicals and graphic arts, and a few agricultural products, such as flowers, banana, and sugar.⁵¹

⁵¹ Garay (1998) and Urrutia et al. (2001). Estimates available from authors on request.

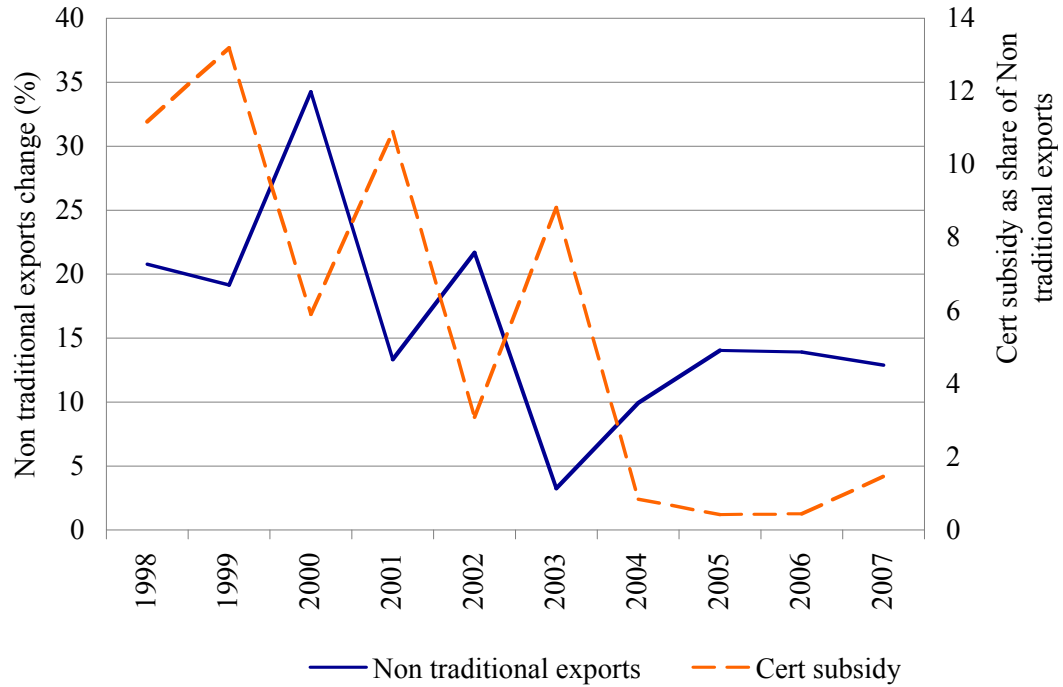
Figure 7 shows the evolution of CAT/CERT average effective rates and non-traditional exports growth for two periods (1971/1991 and 1997/2007), collected from different sources. It suggests a positive relation between CAT/CERT subsidies and growth rates of non-traditional exports with a lag, which is further examined below. As with PV, there has been some concentration of CAT/CERT subsidies, benefiting sectors such as sugar, printing, fertilizer and apparel sectors in later years, though with significant changes over time.⁵²

Figure 7. CAT/CERT Average Effective Rates and Non-Traditional Exports Growth



⁵² Estimates available from authors on request.

Figure 7., continued

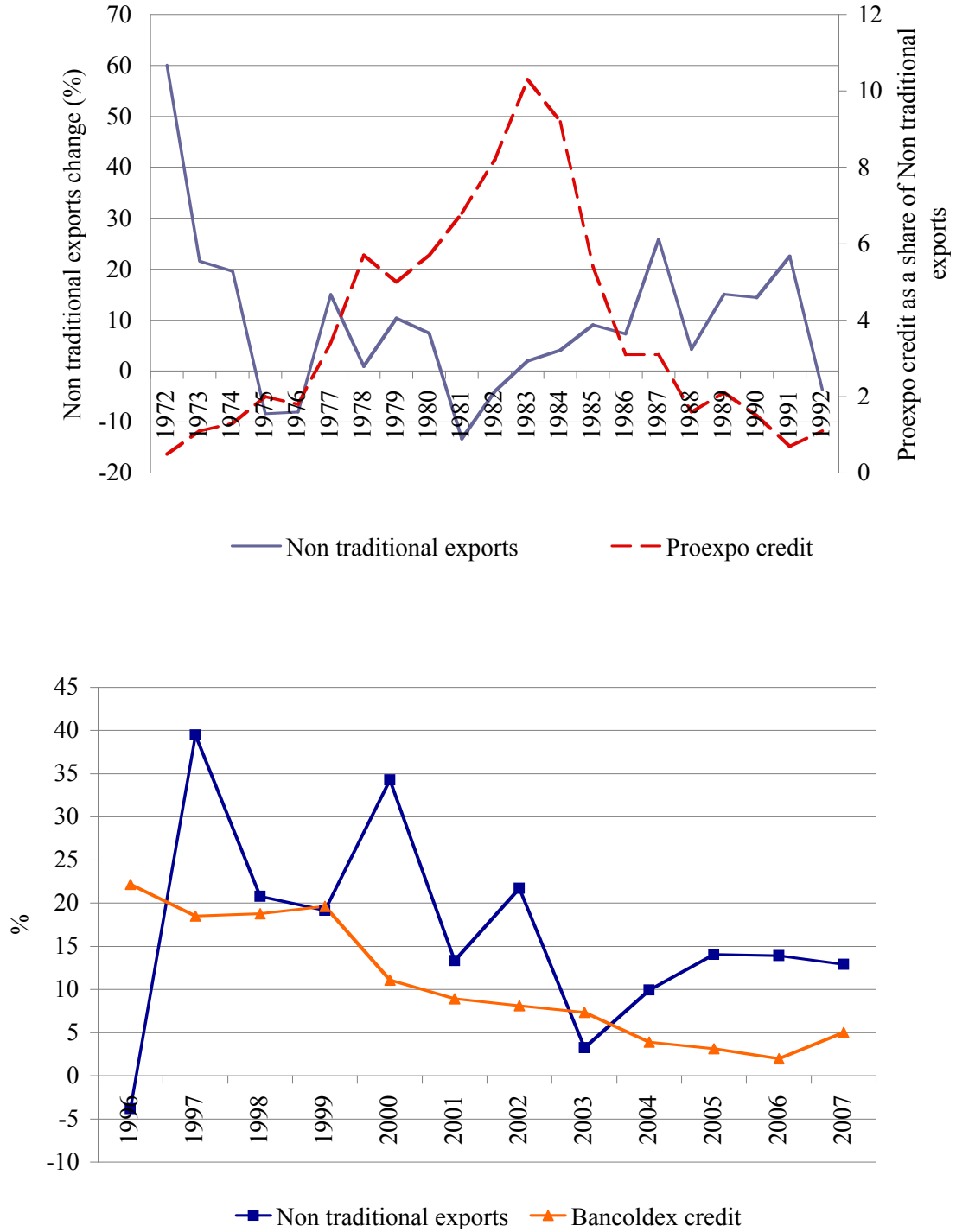


Source: Urrutia et al. (2001) for 1971-1991, Ministry of Industry and Trade and author calculations for 1998-2007.

Figure 8 shows the evolution of Bancoldex credits to exporters. The left-hand panel presents an estimate of effective Proexpo credit subsidy, while the right-hand panel presents only credit versus value of non-traditional exports. Variations in credit subsidy and coverage seem to anticipate export growth rates. There appears to be some concentration, though not much, in sectors such as textiles and apparel, chemicals, printing and food products.⁵³

⁵³ Estimates available from authors on request.

Figure 8. Official Credit to Exports and Non-Traditional Exports Growth



Source: Urrutia et al. (2001) for 1972-1992, Bancoldex and authors' calculations for 1996-2007.

As for Free Trade Zones, earlier ones were established basically as free import zones under Law 105 of 1958, mostly for holding inventories of imported goods that would pay tariffs when retired from the FTZ for use or sale.⁵⁴ In 1985, Law 109 established a modernized Free Trade Zones regime for Exports. Six additional new FTZs were created under this law until 2005.⁵⁵ FTZ investment, exports and employment grew, however, rather slowly. By 2004 exports from FTZs were just 4.1 percent of total exports as compared to figures from around 50 percent (Costa Rica, Mexico), 60 percent (Honduras, El Salvador), 80 percent (Nicaragua, Dominican Republic) and higher (Puerto Rico, Malaysia, Czech Republic, China) in countries that have relied extensively in such an instrument for export promotion).⁵⁶

In order to comply with WTO requirements, Law 1004 of 2005 applied a reduced 15 percent tax rate (as compared to the statutory tax rate of 33 percent) for all firms established in existing or new FTZs, whether dedicated to exports or the local market, as long as they would comply with minimum investment and/or employment requirements to be established by a regulatory decree. Two successive decrees in 2007 established differential requirements for old and new firms located in so called “permanent zones,” agro-industrial zones and port zones, or for new or expanding individual firms located anywhere. As discussed in Section 3, the new regime amounts to a significant tax reduction for all sorts of large firms that qualify in any one of these categories, creating major distortions vis-à-vis existing competing firms. By September 2008, 37 new FTZs had been approved by a special committee set up for this purpose (with a total investment of 4,891 million dollars).⁵⁷

As for Proexport services, we classify them into three groups, following common practice in the literature:⁵⁸ (1) Counseling and Information, which consist of a wide variety of services including training in the export process, provision of information on business opportunities for Colombian products in specific target markets and on transport logistics; and support in the formulation and execution of export plans; (2) Trade Agenda, which refers to the arrangement of appointments with potential customers through the commercial offices of the agency and support of commercial management; and (3) Trade fairs, shows, and missions, outgoing and incoming,

⁵⁴ Barranquilla (1958); Palmaseca, Valle (1970), Cúcuta (1972), Cartagena (1973) and Santa Marta (1974).

⁵⁵ Rionegro (Antioquia), Candelaria (Cartagena), Bogotá and Pacífico (Palmira) in 1993, Armenia (Coffee Zone) in 1996 and Sopo (near Bogotá) in 2000.

⁵⁶ Singa (2007).

⁵⁷ Twenty-seven of which had already been ratified by the Tax Authority. Seven more requests were under consideration, and three had been rejected.

⁵⁸ Volpe and Carballo (2008).

organized and co-financed by Proexport. On average Proexport has assisted 2,500 firms per year, which represent around 25 percent of exporting firms⁵⁹ (see Table 8). The average exporting firm exports on average five products to between two and three countries. Firms with larger total exports, exporting to more countries and/or more products typically use more Proexport services.

Table 8. Characterization of Exporting Firms and Proexport Coverage

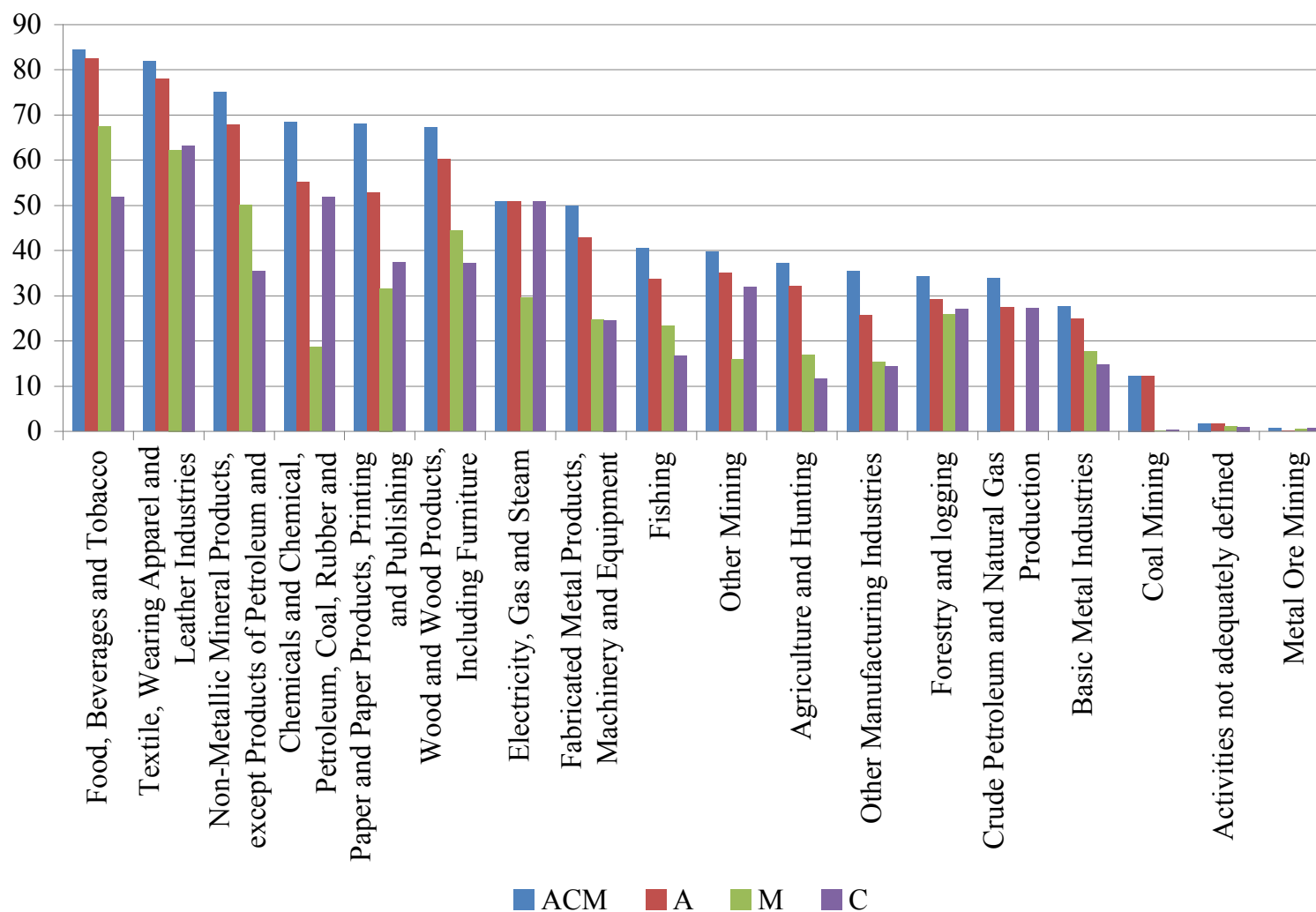
Year	Total exports	Number of countries	Number of products	Number of exporting firms	Number of exporters served by PROEXPORT
2003	13,100	182	4,516	9,881	2,933
2004	16,700	192	4,639	11,189	2,109
2005	21,200	185	4,688	11,695	2,690
2006	24,400	197	4,679	11,399	2,752

Source: Volpe and Carballo. (2008). Exports in US\$ million.

Use of Proexport services varies widely by sector: more than 50 of exporting firms in most manufacturing sectors (and up to nearly 80 percent in the food and beverages and textile and clothing industries) use some Proexport services, while these figures are substantially lower for natural resource-based exporting firms (see Figure 9).

⁵⁹ Volpe and Carballo (2008).

Figure 9. Proexport Services, Participation by Sector 2006



Source: Ministry of Industry and Trade and calculations by the authors. Note: ACM refers to trade agenda, trade missions and counseling; A refers to trade agenda; C refers to counseling; and M refers to trade missions.

4.1.3 Use and Perception of Adequacy of Instruments: Results of Fedesarrollo EOS

Table 9 of the special EOS module undertaken for this study indicates an increasing percentage of firms report having used Bancoldex credit lines (from 48 percent before the 1990s to 64 percent after 2000) and Proexport services (from an average of 37 percent before the 1990s to 44 percent after 2000). There was also a modest increase in the use of Plan Vallejo (from 48 percent to 52 percent). The use of other export promotion instruments has been more stable overtime. As expected, small firms have had less access to all instruments.

Table 9. Use of Instruments by Firms in the Sample

Policy instrument	Before 1990	1990 to 2000	2000 to present
Bancoldex credit lines	48	54	64
Export insurance or other insurance with government support	31	30	30
Exchange-rate hedging with government support	25	23	26
Cat or Cert.	46	54	45
Free export zones	31	36	35
Plan Vallejo	48	53	52
Market information	34	38	43
Fairs and events	41	43	48
Contact with potential clients	37	36	41
ATPA, ATPDEA or other special tariff agreement	31	35	36

Source: Fedesarrollo EOS, October 2008.

Table 10 summarizes firms' opinions on the adequacy of these instruments over time.⁶⁰ Contemporary opinions favor Plan Vallejo over all other instruments, while CERT and exchange-rate hedges receive the lowest marks. Opinion trends over time indicate improvements in perceptions of the adequacy of most instruments: highly significant in the case of Plan Vallejo; significant in the case of Proexport services, FTZs and preferential trade agreements; and more modest in the case of export credit. On the contrary, perceptions of the adequacy of CERT decline sharply over time.⁶¹

⁶⁰ Figure 29 tabulates responses only by firms that answered the question for all three periods. Table 3 in Appendix 1 shows responses by all firms that provided assessments for each individual period. Differences are, in general, not large.

⁶¹ Perceptions of adequacy may be affected by increases or decreases (as in the case of CERT) of the amount of subsidy per beneficiary.

There are some differences of opinion by size of firm. Large firms rate Bancoldex export credit and Proexport services significantly more favorably (especially market information and trade agenda services) than medium-size and small firms. The same is true, though less significantly, for Plan Vallejo and ATPDEA usefulness. These differences of opinion probably reflect differences in access. On the contrary, small firms rate CERT subsidies significantly higher than large or medium size firms, probably because these subsidies make a more meaningful difference for those small firms that receive them (see Appendix 1).

Table 10. Percentage of Firms Rating Instruments as Inadequate

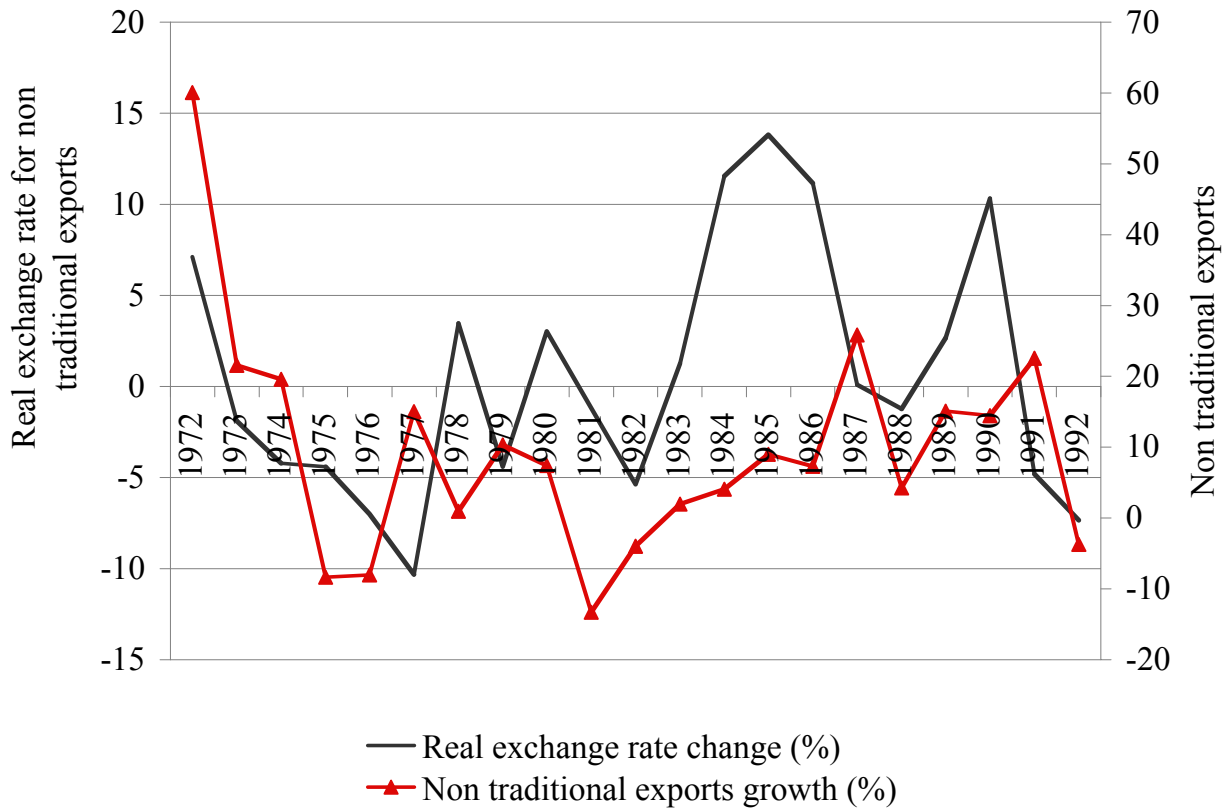
Policy instrument	Before 1990	1990 to 2000	2000 to present
Bancoldex credit lines	24	11	16
Export insurance or other insurance with government support	69	48	38
Exchange-rate hedging with government support	65	61	54
Cat or Cert.	16	21	56
Free export zones	41	32	23
Plan Vallejo	24	10	9
Market information	53	32	25
Fairs and events	53	36	31
Contact with potential clients	68	47	38
ATPA, ATPDEA or other special tariff agreement	45	26	22

Source: Fedesarrollo EOS, October 2008.

4.1.4 Impact Estimates

Growth rates of non-traditional exports followed closely the evolution of the real exchange rate, including the equivalent subsidies of different export promotion instruments, as shown in Figure 10, for the period 1967 to 1993.

Figure 10. Real Exchange Rate Change and Non-Traditional Exports Growth



Source: Ocampo and Villar (1993).

This impressionistic evidence has been confirmed by several previous econometric studies,⁶² including controls such as the degree of capacity utilization and/or indicators of external demand. Such results suggest a positive impact of export subsidies. However, most of the variation of the effective real exchange rate was due to variations in the real exchange rate and not on the subsidies themselves. Some of these studies also found important differences in the response of exports to the effective real exchange rate in different sectors. Typically, elasticities were lower or non-significant in the case of capital-intensive sectors.

We performed similar exercises on more recent data for the manufacturing sector. The model used was an ISIC 3-digit sector level fixed effects regression explaining export growth. Export promotion policies were used as explanatory variables together with contemporary world

⁶² See, for example, Villar (1984 and 1992), Ocampo and Villar (1993), Steiner and Wüllner (1994), Mesa, Cock and Jiménez (1999), Echavarría (1980), Botero and Meisel (1988), Alonso (1993), Quintero (1997), Roberts and Tybout (1997), and Urrutia et al. (2001).

imports (as an indicator of external demand), real devaluation and GDP growth per year. The results are shown in Table 11 below. Export promotion policy variables enter the estimation as a share of exports,⁶³ and the first regression also includes tariffs and tax exemption rates among the explanatory variables. All policy variables enter the regressions with a lag. Together with the fixed effects, this should mitigate biases from potential endogeneity of these variables.

Coefficients on the export promotion policy variables are significant, except for CERT, and have the expected sign, indicating that Plan Vallejo and export credit did have a positive effect on export growth in the period under examination, after controlling for other determinants of sector-level export growth. Usage of Proexport services was also included, but results are swept away by the sector-level fixed effects because of little variance over time.⁶⁴ The coefficient on tariffs is negative and significant, indicating that protection does not seem to contribute to export growth, and the coefficient on the tax exemption rate is found to be not significantly different to zero. We explored the effect of interactions but did not find statistically significant effects of these variables.

⁶³ Bancoldex credit and CERT subsidies correspond to amounts effectively received by each sector. Plan Vallejo refers to all imports entering under Plan Vallejo exemptions under the corresponding ISIC code. While it is often true that inputs belong in the same ISIC category than the final products they are used to produce, the measure as it is may be reflecting exemptions on inputs used by other exporting sectors (competition in the domestic market) and/or missing exempt input imports corresponding to the ISIC sectors under consideration. The value of exempt imports corresponding to each ISIC 3-digit sector, regardless of the ISIC code of the imported inputs (which would be a more accurate measure of subsidies under Plan Vallejo), has been requested from DIAN but is not yet available.

⁶⁴ We only have Proexport services data available for three years.

**Table 11. Determinants of Sector-Level Export Growth, 1996-2006,
Fixed Effects Regression**

Dependent variable: annual export growth (%)	(1)	(2)
Plan Vallejo / Exports (t-1)	0.33 (0.176)*	0.38 (0.151)**
Bancoldex credit / Exports (t-1)	0.15 (0.704)*	0.15 (0.060)**
CERT / Exports (t-1)	3.07 (5.459)	2.05 (4,387)
Tariff (t-1)	-7.77 (3.937)*	
Tax exemption rate (t-1)	-0.60 (0.777)	
World imports (log)	0.18 (0.098)*	0.16 (0.092)*
Real exchange rate change (t-1)	2.50 (0.369)***	2.34 (0.385)***
Real exchange rate change (t-2)	0.96 (0.362)**	0.88 (0.374)**
Real GDP growth	2.34 (0.953)**	2.25 (1.014)**
Constant	-5.32 (3.376)	-6.27 (3.431)*
Number of observations	233	308
R ²	0.23	0.23

Note: Robust standard errors, clustered by year. ISIC 3-digit sector fixed effects. *** 1% significant, ** 5% significant and * 10% significant.

Some studies have attempted to separate long-term and short-term effects of the real exchange rate and external demand.⁶⁵ They have found strong evidence of long-term effects and weak or no evidence of short-term effects and volatility. These studies, however, do not include the equivalent subsidy of the different export promotion instruments. However, their results could lead to the hypothesis that stable instruments (such as Plan Vallejo or export credit) could have been more effective than those whose subsidy rate has varied significantly over time (as in the case of the CAT/CERT), which is consistent with our results.

A recent study⁶⁶ estimated the effects of Proexport services, by using multiple treatment matching techniques on export data for all exporting firms using different combinations of these services or none at all. They found that firms that do not use Proexport services tend to have a weaker export performance than those that use any Proexport service, both in terms of increases in number of markets and products exported.⁶⁷ They also found that those that used all Proexport services showed better export performance than those that used only one type of service. Estimated impact was lower for those that only attended fairs or missions but did not use trade agenda or information services.

In contrast to the results noted above, a rather negative assessment of the role of export promotion policies on the development of new export sectors comes from a recent study on the determinants of success in the emergence of four specific groups of products: cut flowers, underwear and swimwear, sanitary products and confectionery products.⁶⁸ The study concluded that “the export discoveries” studied emerged exclusively from the private initiative of entrepreneurs who bore all the costs and assumed all the risks of the investments. Information regarding these potential new exports in none of the cases came from public information or strategic alliances between the government and the entrepreneurs. Nor was there a deliberate policy to support the sectors or products where discoveries occurred. Exporters recognized having benefited from policies specifically designed to promote non-traditional exports⁶⁹ but considered that impact limited in scope. Plan Vallejo had the greatest effect since it allowed producers to overcome import restrictions. In some cases Proexpo credits were useful, as were

⁶⁵ Reinhart (1995), Caballero y Corbo (1989), Arize (1999), Misas, Ramírez and Silva (2001)

⁶⁶ Volpe and Carballo (2008).

⁶⁷ Firms that used all services tended to have a rate of growth of exports 27 percent higher (13 percent in number of countries and 12 percent in number of products exported) than for similar firms that did not use any Proexport service.

⁶⁸ Arbeláez, Meléndez and León (2007).

⁶⁹ They also acknowledged the contribution of a positive macro and trade policy environment.

some other promotional measures, such as participation in international fairs, dissemination of information about foreign markets, and organization of commercial missions to different countries to bring buyers and sellers together. But exporters considered that government support in helping investors to solve coordination problems or address market failures was neither well organized nor systematic. The main obstacles faced by pioneers were related to transportation, infrastructure, export/import procedures (registration), phytosanitary issues (especially in the cases of flowers, mangos, and confectionary goods), and entry barriers or protectionist measures faced in foreign markets (e.g., dumping cases and phytosanitary barriers). Other common uncertainties were those related to the level of knowledge of foreign markets, competitors, the size and characteristics of the demand, and consumers' needs. The government was helpful only in specific cases, and only sporadically with respect to those problems. In general terms, obstacles were overcome through coordination among pioneers (as in the case of flowers), or individually (as in the case of manufacturing export discoveries).⁷⁰

4.1.5 Conclusion

Colombia has been relatively successful in diversifying its exports and obtaining high rates of non-traditional exports growth since 1967. But, how much of these achievements can be attributed to export promotion instruments or to the overall macro environment, including real exchange rate levels and volatility? And how adequate has the design of export promotion instruments been? It would appear from previous studies that there was an important positive combined effect of real exchange management and export subsidies from 1967 up to 1991. It is difficult, though, to separate these effects.

From 1991 onwards, new evidence from this study suggest a positive and significant effect of Plan Vallejo (the duty drawback system) and export credit, in spite of an environment of higher volatility in the real effective exchange rate (REER) and the sharp reduction of the magnitude of subsidies thereafter. Firms' assessments also suggest that Plan Vallejo continues to play an important role, in spite of tariff reductions, especially for capital-intensive sectors and sectors intensive in imported inputs, for which the combined effect of duties and delays in VAT rebates could be substantial. It thus appears to be an effective "second-best" policy, given the permanence of tariffs and delays in VAT rebates.

⁷⁰ The study notes that foreign partners were significantly more positive in their assessment of government contributions than local producers.

Also, firms report increasing use and satisfaction with Proexport services, especially with trade agenda and market information services, which apparently respond to important perceived market failures. A recent study estimated a significant effect of these services in increasing the number of markets and products exported. However, it appears that such services or other promotion instruments have played a minor role in the successful development of new export sectors, as indicated from available studies for four cases.

Subsidies such as CAT/CERT or initial subsidized export credit through Proexpo probably had justification in eras high tariffs (as not all firms could access Plan Vallejo due to high transaction costs) and reduced access to credit. As these costs and constraints have eased (see next section on access to credit by SMEs), there appeared to be little justification for keeping outright subsidies, and indeed they have tended to disappear, with temporary exceptions such as the recent selective compensation for real exchange appreciation.

It is more difficult to assess the effects of FTZs. When they were Export Promotion Zones they had much lower importance, in terms of investment, exports or employment, than successful uses of such instruments elsewhere. Now that they have been converted to general-purpose free trade zones and their use is exploding, they may facilitate some new export initiatives. Since this is no longer their only objective, however, they cannot be classified as “export promotion interventions” but rather as a way to grant tax incentives to large investment projects, whether intended for exports or for the domestic market.

Finally, there are no estimates of the effects of exchange rate hedging or export insurance supports. There may be some market failures in these markets, but they do not seem to justify the liberal use of subsidies recently given to currency hedges in some sectors.

4.2 Training

4.2.1 Rationale and Evolution

Externalities associated with training and skills acquisition have been recognized for long. On the one hand, individual workers cannot appropriate the full social benefits of investments in their own skills, as long as there are agglomeration benefits: a more skilled worker will not only be more productive but increase the productivity of others with whom he interacts, in his own firm and elsewhere. Thus, left to themselves individuals will under-invest in training. Nor can firms investing in training of their workforce fully appropriate the resulting benefits as a

consequence of labor mobility. Other firms in the same or other sectors, in the national economy or elsewhere, will benefit from such an investment. Hence a classic market failure develops: left to themselves, firms and individuals will in the aggregate invest sub-optimally in training. These arguments have led many countries either to subsidize private training or, more often in Latin America, to create public training institutes financed by taxes.⁷¹

In 1957 Colombia created SENA (the Spanish acronym for the National Institute for Learning), a public agency devoted to technical training, financed by a compulsory “contribution” (i.e., tax) on wages. SENA’s board has been presided by the Minister of Labor (now Social Protection) and is composed by representatives of Government, employers and unions. Although there was a general consensus on the positive contributions of SENA in its initial years of activity, since the early nineties, with the increased competitive pressures originating in trade opening, there have been strong critiques about the inefficiency and inadequacy of many SENA programs. Consequently there have been several attempts at major reform, mostly directed towards establishing a competitive market for training services, which have faced significant union and political opposition and resulted in marginal or incremental adjustments (in 1990 and 1994), providing some limited room for competition of training services financed through the wage tax. A couple of recent studies have attempted to evaluate the effectiveness of SENA⁷² and found large inefficiencies (significantly larger costs than private sector providers); lower impact of SENA programs, as compared to private service, on future wages and firms productivity; and a poor opinion by firms on the adequacy and quality of programs.

Furthermore firms and trainees that pay for the services chose SENA in less than 16 percent of cases, and even those that get free access to SENA’s services chose it in only 50 percent of cases. Thus, in spite of its huge budget, the institute was effectively supplying only around 20 percent of training services. Of the remainder, 17 percent were supplied by other public institutes, 38 percent by private providers, and 25 percent by firms themselves.

4.2.2 Firms’ Assessments of Skills Availability

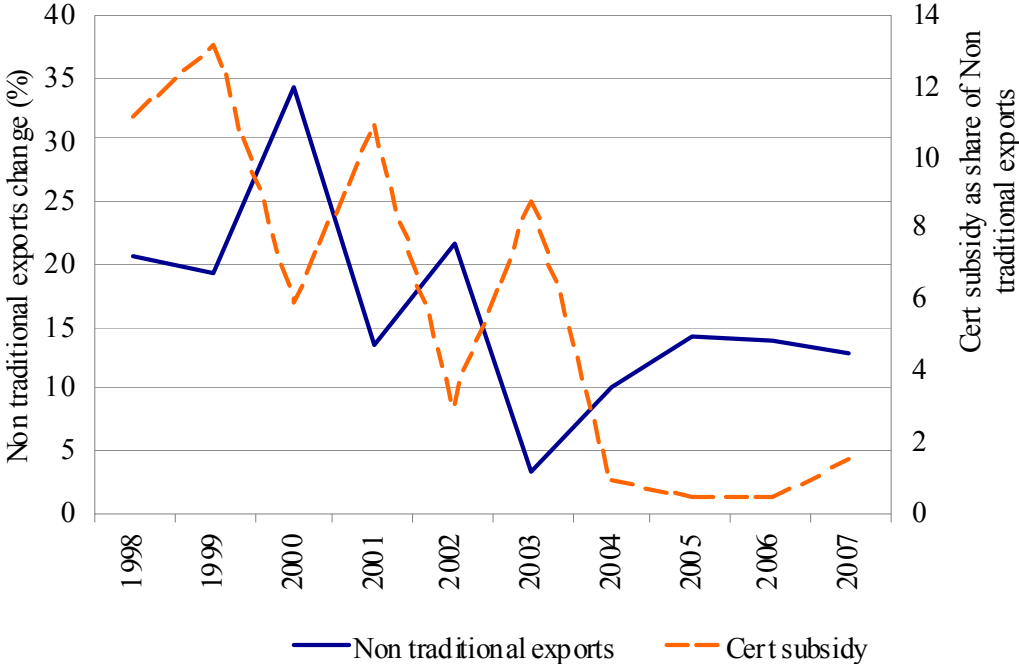
To start with, most firms do not see skills availability as a binding constraint for growth or competitiveness. A Fedesarrollo special survey carried on in 2003 indicated that only around 13

⁷¹ See Burki, Perry, Gill, Guasch and Maloney in De Ferranti et al., editors (2003b).

⁷² Gaviria and Nuñez (2003); Barrera and Corchuelo (2004).

percent of firms considered the “quality of the supply of production workers” a “major obstacle” affecting the ability to compete, while an additional 28 percent ranked this factor as a “minor obstacle” for competitiveness. The corresponding figures for the “quality of trained personnel (technicians)” were only 15 percent and 35 percent. Comparatively, firms ranked taxes, access to or cost of capital and labor costs and labor market rigidity as significantly more serious obstacles to competitiveness (see Figure 11). This notwithstanding, 61.7 percent of firms in the same survey responded that the quality of the supply of trained personnel was low. Corresponding figures were 47.5 percent for large firms and 72.1 percent for small firms, indicating that the latter have more difficulty in obtaining adequately trained workers when they need them.

Figure 11. Weighted Competition Obstacle Index



Source: Fedesarrollo SENA survey, 2003.

In the same vein, only 7 percent of firms responding to the special module of the Fedesarrollo Survey carried out for this study ranked the lack of adequately qualified human capital (either with basic or specialized technical skills or professional training) as a major factor limiting firm expansion. To compare with, the corresponding figure for “high cost of financing”

was 15 percent. There were large differences, though, among large and small firms: the latter quoted the lack of adequately qualified workers as one of the five main factors limiting firm expansion in 52 percent of the cases with respect to basic technical skills, 35.4 percent with respect to professional skills and 18.8 percent with respect to specialized technical skills. The corresponding figures for large firms were just 9.7 percent, 5.5 percent and 5.9 percent (see Table 12).

Table 12. Limitations for Productive Investment

Restrictions to productive investment	National total		Large firms		Medium firms		Small firms	
	I_i	I_{i-5i}	I_i	I_{i-5i}	I_i	I_{i-5i}	I_i	I_{i-5i}
High credit cost	20.2	15	18.6	14	20.2	15	26.7	22
Lack of collateral to access credit	2.4	2	2.1	2	2.1	2	4.4	3.0
Lack of human capital adequately qualified at professional level	2.2	6.7	1.7	5.1	3.3	5.0	2.5	35.1
Lack of human capital adequately qualified at technical specialized level	2.9	8.3	2.2	5.5	2.2	7.4	7.4	30.2
Lack of human capital adequately qualified at technical basic level	2.2	9.6	2.2	8.8	1.1	8.7	4.9	15.9

Source: Fedesarrollo EOS, October 2008

Interestingly, in our interviews with the private competitiveness council, managers of highly innovative firms quoted the low supply of qualified specialized professional as the factor limiting their potential to expand exports in frontier sectors. A similar opinion came from ACOPI, the association of small industrial enterprises -the other extreme- for whom low skills of micro and small entrepreneurs themselves are the main limiting factor for competitiveness. This opinion coincides with the EOS' result and resonates with the findings of recent studies on informality that have concluded that in most cases micro firms remain informal because of their low productivity potential, which in turn is a reflection of low skills of micro entrepreneurs. In other words, lack of adequate skills seems to be a severely limiting factor at the wide bottom (micro and small firms) and at the narrow top (the leading technological firms), but not for the majority of medium size and large firms.

4.2.3 Use of Training Providers

A special Fedesarrollo 2003 SENA special survey found that around 70 percent of firms sponsored SENA apprentices, 60 percent used training services (of which 35 percent used *specialized* training services) and 52 percent hired SENA graduates. Use of some new SENA services, however, such as technological services were quite low (around 12 percent) Differences by size of firm remained large. Nearly 90 percent of large firms still sponsored apprentices, 76 percent used training services (50 percent using specialized training services) and 63 percent

hired SENA graduates, while the corresponding numbers for small firms were 48 percent, 44 percent (25 percent specialized) and 48 percent. Use of technological services was equally low across firm sizes.

The EOS module designed for this study shows lower figures than the 2003 Survey. Around 34 percent of firms reported using SENA general training services and 33 percent specialized training services. Similarly, 37 percent reported using other public training services, and 30 percent private training services. Some 34 percent reported carrying out in-house and on-the-job training. Small firms used less private training services and more specific training through SENA than large and medium firms. There appear to be no major differences by size in the use of other public training services or in-house training. The answers suggest that firms have reduced the use of all types of external training services over time, while keeping the same level of on-the-job training efforts.

Table 13. Use of Training Programs

Policy instrument	Total	Large	Medium	Small
Basic training through SENA	34	33	35	36
Specific training through SENA	33	36	23	45
Training through other government owned institute	37	36	42	33
Training through private institute	30	30	33	25
Training within the firm	34	36	30	40

Source: EOS Fedesarrollo Survey, 2008.

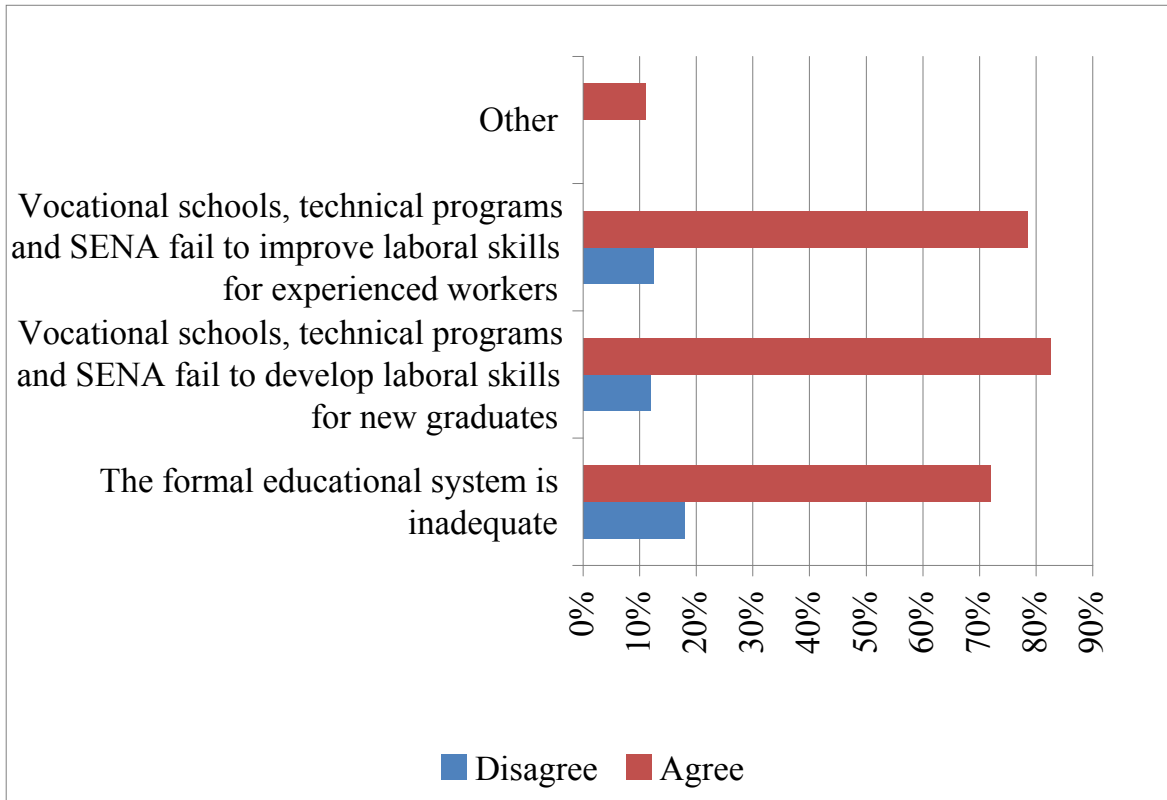
Workers with higher (tertiary) education prefer private training services. The probability of attending private training services also increases with the level of formality and with the education profile of parents (see Barrera and Corchuelo, 2004).

4.2.4 Assessment of Training Providers

Firms are generally very critical of the quality of training services, especially those offered by SENA. To begin with, nearly 80 percent of respondents (61 percent of the sample) in the special 2003 Survey stated that there was a low supply of skilled workers and that SENA and other technical programs and technical schools failed to improve labor skills for experienced workers. More than 80 percent stated that those facilities and programs also failed to develop labor skills for new graduates (see Figure 12⁷³).

⁷³ Fedesarrollo, SENA Survey, 2003

**Figure 12. Reasons for “Low” Supply of Trained Workers
(among the 61 percent that consider the supply to be low)**

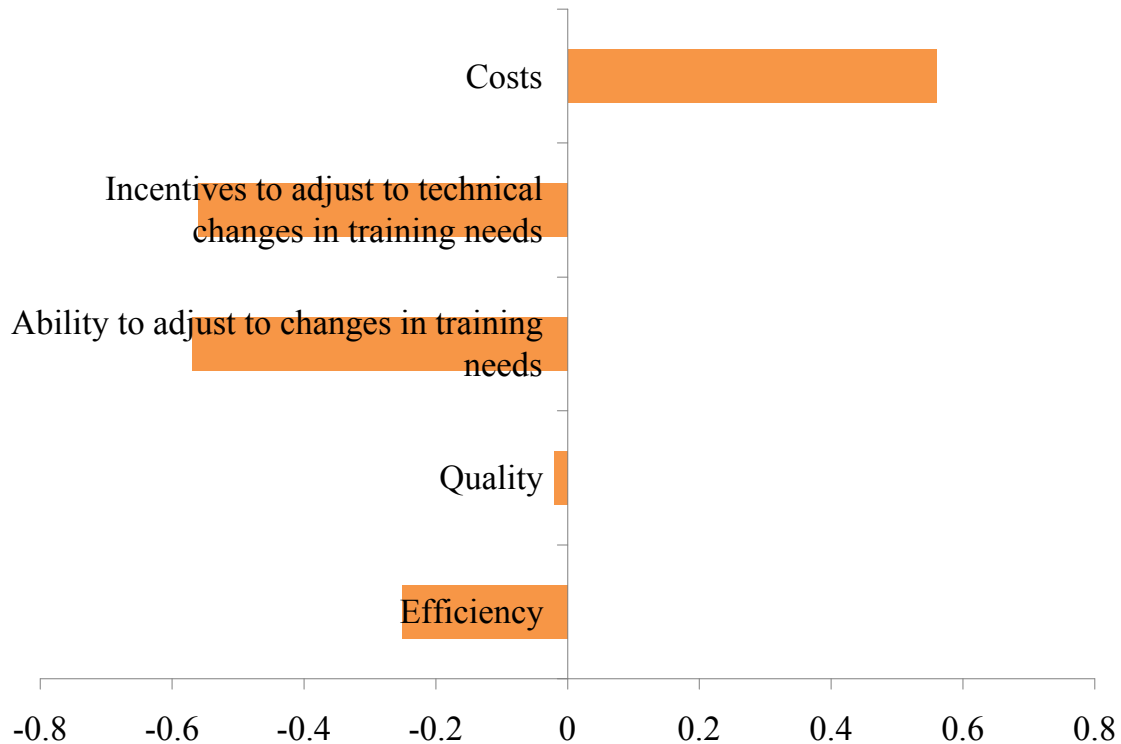


Source: Fedesarrollo SENA Survey, 2003.

When comparing SENA to other providers, a large majority of firms answered that SENA had fewer incentives and less ability to adjust to technical changes in training needs and higher costs. A majority also felt that efficiency and quality was lower (see Figure 13). Small firms tended to have a more positive perception of quality than medium or large firms (a simple majority of small firms ranked SENA’s quality as higher than that of competitors) but similar perceptions of poor incentives and ability to adjust to changing needs and higher costs.⁷⁴

⁷⁴ Fedesarrollo (2004).

Figure 13. SENA versus Others Provider of Training: Index



Source: Fedesarrollo SENA Survey (2003).

The EOS module designed for this study indicates that perceptions about the adequacy of SENA programs have improved overtime. While 38 percent of firms thought that general training in SENA was deficient before the 1990s, only 24 percent considered it deficient in the present decade (see Table 14). The corresponding figures for specialized training are 45 percent and 27 percent. Ratings are better for private providers and in house training (only 18 percent and 15 percent, respectively, thought that their services were deficient) and worse for other public provider services (54 percent considered them deficient), for which there is little perception of improvement over time. Contrary to previous surveys results, small firms rate SENA services worse than large firms do. Similar gaps are found in their ratings of private training services, indicating that small firms have less access than large firms to high-quality private services, though they still rank them as more adequate than SENA's.

Table 14. Percentage of Firms Rating Instruments as Inadequate

Policy instrument	Before 1990	1990 to 2000	2000 to present
Basic training through SENA	38	24	24
Specific training through SENA	45	28	27
Training through other government owned institute	58	54	54
Training through private institute	29	27	18
Training within the firm	27	16	15

Source: Fedesarrollo EOS, October 2008.

When asked about desired changes in SENA, about 50 percent of firms responding to the 2003 special survey indicated that they would prefer SENA to administer the training budget (financed out of wage taxes) and let employers and trainees choose providers, while 43 percent preferred to keep SENA’s virtual monopoly (“keep SENA as it is”) but improve programs and efficiency. Only 2 percent thought that no major changes were needed. A large share of firms of firms also considered that SENA required significant improvements in attention to firms with needs for technical improvements (62 percent), poor workers (59 percent), unemployed workers (58 percent) and SMEs (57 percent). Respondents also noted that SENA needed to improve in regard to selection of young students (43 percent), worker trainees (35 percent) and firms (35 percent). Less than 10 percent of firms answered there was little need for change in most of these dimensions.

4.2.5 Impact

Gaviria and Nuñez (2003), controlling for selection biases, somewhat surprisingly found a significantly negative effect on wages and employment probability for workers attending SENA training as compared to equivalent workers who did not undergo training. They also found negative, though lower, effects of training in other public institutions and high and significantly positive effects on both wages and probability of employment of attending private training services.

Barrera and Corchuelo (2004), in a more detailed exercise, arrived at a just slightly different conclusion. According to them, SENA training seems to yield modest positive effects on wages for male and formal workers, as compared to wages of similar workers with no training. However, if the comparison group is other trainees, attending SENA yields negative

results. Further, SENA returns seem to be a negative function of education levels and a negative function of years of experience.

The study by Barrera and Corchuelo interestingly replicates some previous studies, using their data and more updated econometric techniques to deal with selection biases. They consistently find modest or negative results for SENA training, except for the earlier period (around 30 years ago). Further, SENA trainees come today from the lower tail of the ability distribution, while this does not seem to be the case for 30 years ago. The authors hypothesize that these changes may be explained by the fact that SENA was initially not just a relatively effective monopoly provider, but the only option for income-constrained workers, while now changing technologies and needs, more competition from other providers and higher incomes and financial market access have challenged its ability to adapt, rendering it obsolete as a training alternative.

4.2.6 Conclusion

All results presented in this section suggest the urgent need for facilitating increased competition in training services and doing away with SENA's virtual monopoly in the use of earmarked wage taxes. These in addition have been found to be an important incentive for informality⁷⁵. The political economy question that remains unanswered, though, is why several reform initiatives in this direction have failed to succeed and changes have been rather marginal.

4.3. Microfirms and SMEs: Access to Credit and Other Financial Services

4.3.1 Rationale for Interventions

Micro enterprises constitute around 96 percent of firms in Colombia and, together with SMEs, are responsible for around 80 percent of private employment.⁷⁶ Most of micro enterprises are informal, low productivity and high rotation firms with little growth potential. However, a fraction of them can be highly productive (TFP above average in their sectors) and have significant growth potential, often impaired by lack of access to credit, training, marketing support and formal institutions.⁷⁷ As firms grow in size, growth potential increases and formality and access to credit and other services and institutions improve. However, limitations remain

⁷⁵ See Cunningham (2000).

⁷⁶ CONPES Policy Document No. 3484.

⁷⁷ See Perry et al. (2007), and Cárdenas and Rozo (2007).

associated with the higher transaction costs associated in extending credit and other services to small as compared to large firms. In particular, costs associated with information gathering, credit analysis, account management and legal aspects related to collateral and enforcement have large fixed components and hence do not grow in proportion to the size of loans and beneficiary firms. Such large differences in transaction costs are usually considered as leading to important market failures.

Which interventions might be efficient in reducing these transaction costs and facilitating micro and SME firms with growth potential to achieve it, by overcoming restrictions in access to credit and other services, while avoiding subsidizing micro and SME firms with no growth potential? There are probably no clear-cut answers to this question and, thus, interventions in these areas must be judged by the balance between Type I (leaving firms with growth potential without access to credit and other services) and Type II (subsidizing firms with no growth potential) errors. In particular, given the much higher proportion of micro and SME firms without growth potential, generalized subsidies to all micro or SME firms would be highly inefficient. On the contrary, some market-based interventions, which may be taken advantage of primarily by firms with growth potential, might show a positive cost-benefit ratio.

Colombia has had a relatively long history of interventions geared to extend credit access to micro, small and medium enterprises.⁷⁸ Early interventions took the form of the creation of a state-owned specialized financial intermediary (Corporación Financiera Popular), which operated between 1968 and 1998, and a guarantee fund (Fondo Nacional de Garantías-FNG) which was created in 1982 with equity provided by the Instituto de Fomento Industrial (IFI) and the Association of Pymes (ACOPI). The latter has been frequently capitalized with public budget resources.⁷⁹ IFI and subsequently Bancoldex, after IFI was merged with it in 2003, have offered special credit lines and financial services for microenterprises and SMEs (MIPYMES). As shown below, both FNG and Bancoldex operations with microenterprises and SMEs have grown significantly in recent years.⁸⁰ More recently, the Banca de Oportunidades program launched in 2006 has promoted agreements between authorities and commercial banks to extend access to financial services to municipalities without previous banking facilities, thus helping

⁷⁸ In addition there are other programs to support micro and SME creation and growth, such as officially supported venture capital and incubators, technical assistance and subsidies to R&D, which we do not discuss here.

⁷⁹ A new capitalization is envisaged through a draft law on Financial Reform being discussed in Congress at the time of writing.

⁸⁰ Salazar and Guerra (2007).

local microenterprises and SMEs access financial services. There have been as well recent regulatory changes geared to facilitating the development of microcredit by commercial banks⁸¹ and financial leasing and factoring, which are of special importance for MIPYMES. Most commercial banks have opened specialized sections on microcredit and SMEs, utilizing techniques developed by NGOs working in this field such as scoring to help assess risk profiles and bring down transaction costs. Few of these instruments are exempt from Type II errors (with the exception of regulatory changes), but they may have a positive cost-benefit ratio depending on implementation details.

To begin with, some of these interventions appear in principle to be adequate second-best responses to a market failure typical of underdeveloped credit markets. In such markets, due to excessive asymmetric information and enforcement problems, credit is usually rationed in an inefficient manner through the generalized use of collateral and personal relations. Such a market failure should be overcome, in the long run, through institutional solutions: reducing asymmetric information costs through credit bureaus; improving (legal and judiciary) enforcement institutions; and influencing informal institutions (“repayment culture”). However, such “first best” actions are frequently slow to evolve (e.g., improving the judiciary) or politically difficult to establish. Thus, due to constitutionally mandated protection of privacy and a historical tradition and prevalent culture of protecting the debtor (common to other Latin American countries), efforts to institute effective credit bureaus and to reform laws relating to creditor rights have faced significant political opposition. Under such circumstances, credit rationing through generalized use of collateral and personal relations might prevail for a long time, and second best interventions oriented to overcome restrictions of access to credit by micro and SME firms with growth potential, originating in their lack of collateral and direct relations with bank managers, might be an efficient solution.

In this light, partial credit guarantees by FNG appear as a particularly potentially efficient second best policy. It can be argued that a centralized guarantee fund will achieve both savings from broader risk pooling and economies of scale in setting up scoring and other techniques to reduce the effect of asymmetric information problems. As long as commercial banks retain a significant share of risk, Type II errors might be kept under control. The devil is in the details,

⁸¹ Mostly related to flexibilizing interest rate “caps” (“usura” limits) that were constraining its development.

though, and while the Colombian and Chilean guarantee funds appear to perform rather well, this is not the case of similar initiatives in other Latin American countries, as discussed below.

Similarly, government-sponsored agreements with commercial banks to serve underserved areas may be an efficient second best policy, as long as the compensation provided is not excessive. Such compensation, however, should be preferably subsidies allocated through auctions rather than opaque regulatory agreements, as seem to be the case in Colombia.

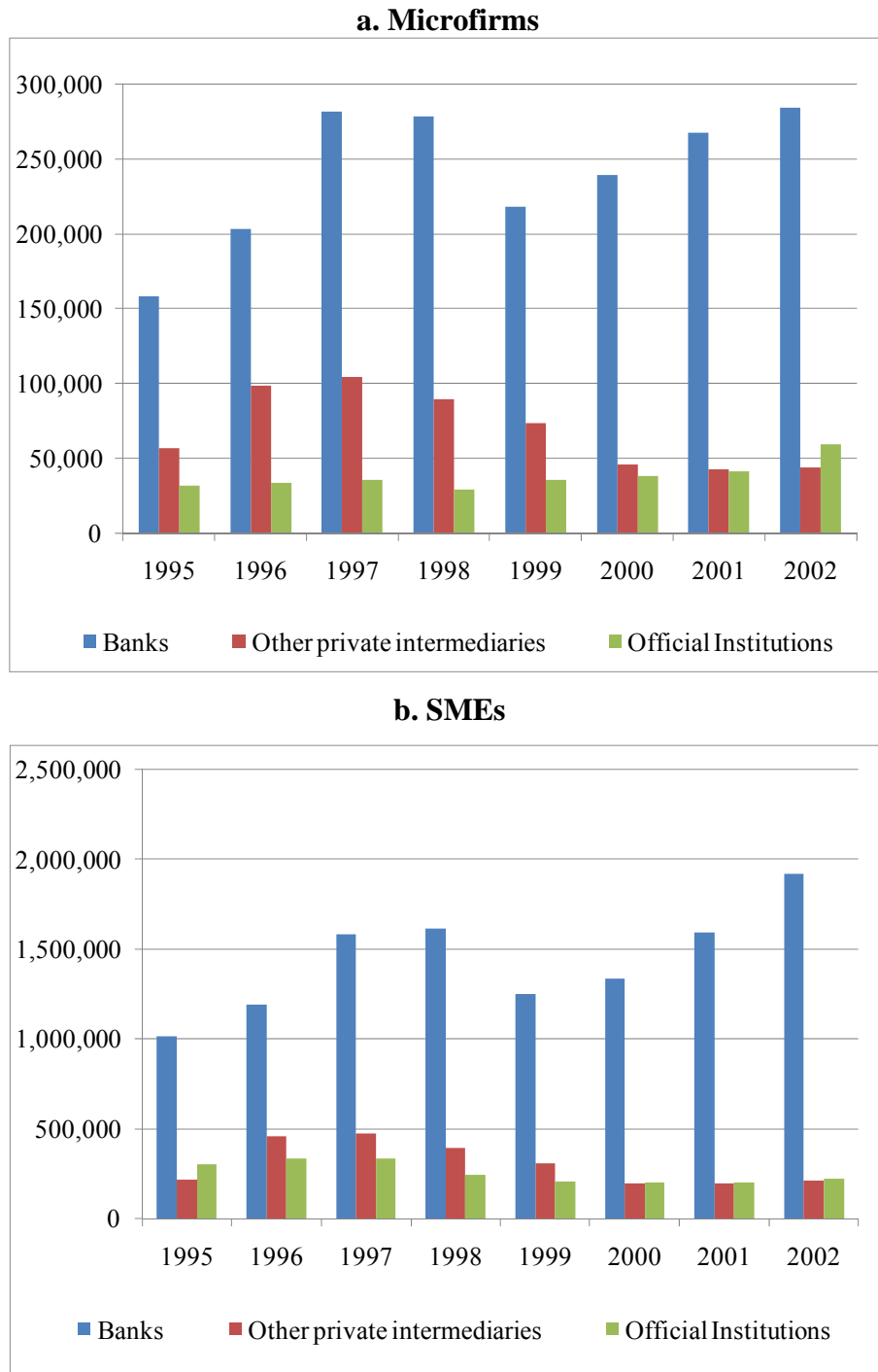
More debatable is the use of subsidized rediscount facilities. The initial high subsidy of IFI lines has been replaced by a much lower subsidy implicit in Bancoldex lines. Bancoldex does not receive direct public subsidies, though there are some implicit subsidies through the use of public capital. Bancoldex rediscount lines appear attractive to banks as they reduce their liquidity risks and costs. Credit risk remains with banks, limiting the scope for distortions. SMEs often request simultaneously FNG partial guarantees and credits supported through Bancoldex rediscount lines. Given the large expansion of credit to SMEs in recent years, as shown below, the combination of these two instruments appears to have been highly effective.

A clearly inferior second best solution was the establishment of a public bank, as there is no reason to believe that such an institution would be better than private banks in collecting information or assessing risks, not to mention the fact that it is prone to be affected by political interference. In fact, for these reasons the initial solution of a specialized public bank (CFP) was abandoned early in Colombia in favor of more market-friendly interventions.

4.3.2 Evolution of Access to Credit and Public Programs

Figure 14 shows the evolution of credit to microenterprises and SMEs by type of financial intermediary, which followed closely the performance of overall credit until 2002. Growth has been quite fast in recent years, though comparable figures are not available. As shown in the figure, most SME credit is presently supplied through commercial banks and other private financial institutions, and the direct official credit contribution is quite small. However, credit through commercial banks is partially supported through FNG guarantees and Bancoldex (and Finagro) SME rediscount credit lines, which have grown significantly in recent years (Figure 14).

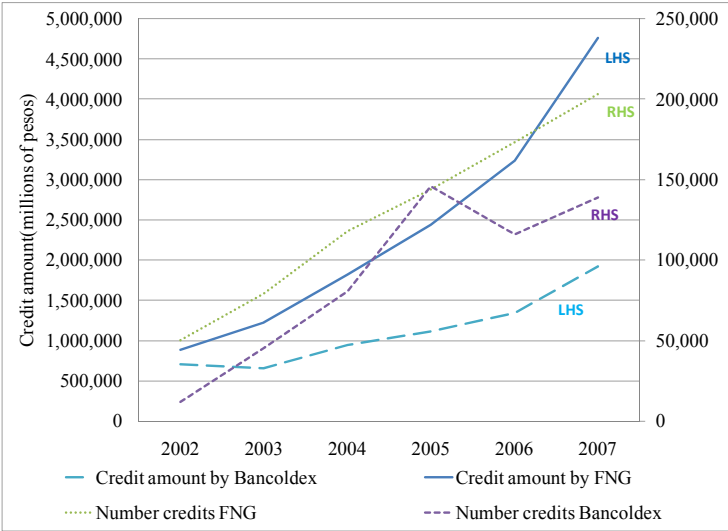
Figure 14. Credit Amounts Provided to Microfirms and SME Firms by Type of Financial Institution



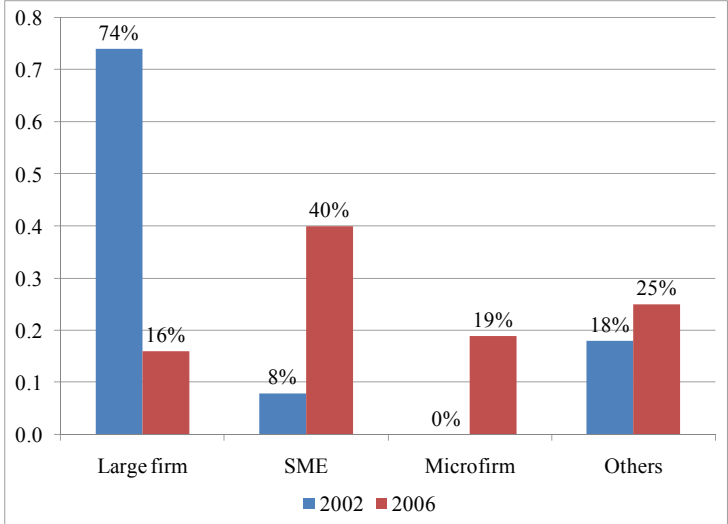
Source: Superfinanciera and authors' calculations.

Since IFI was merged with Bancoldex in 2003, Bancoldex liquidated most previous IFI credit lines in favor of large firms and gave a strong push to the consolidation of microenterprise and SME credit lines as shown in panel b. of Figure 15. Relatively large explicit subsidies in initial CFP and IFI lines were replaced by market-based rates in Bancoldex lines, with relatively low implicit subsidies originating in the use of official capital and multilateral credit lines.

Figure 15.
a. SME Bancoldex and FNG-Supported Credits



b. Bancoldex Credits by Firm Size



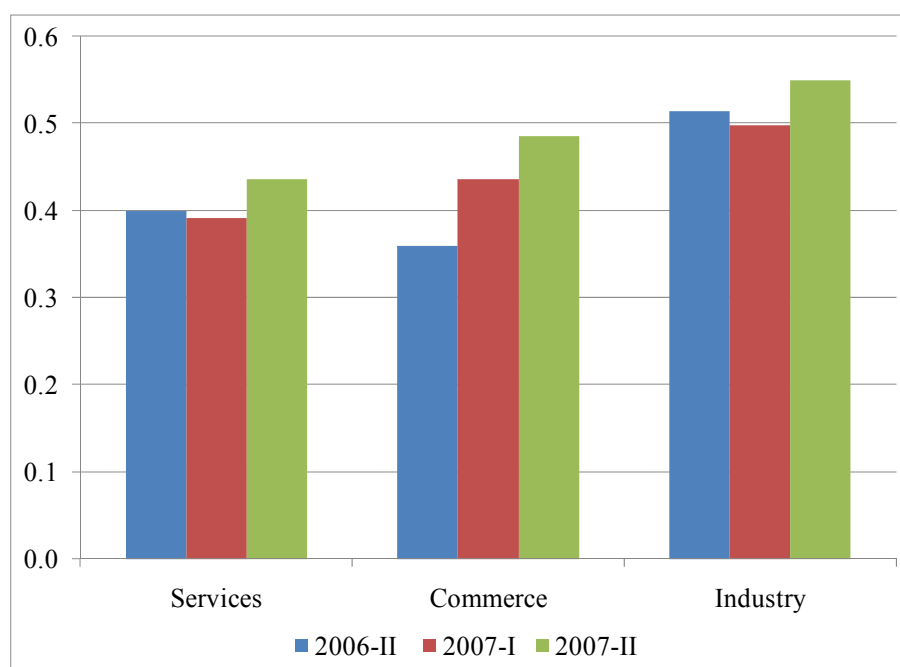
Source: www.sigob.gov.co, Bancoldex 2006 and authors' calculations.

4.3.3 Assessments of Access to Financial Services by SMEs

A recently launched biannual SME Survey by ANIF (National Association of Financial Institutions), Bancoldex and Banco de la República, provides a clear assessment of SMEs' present access to credit and other financial services. Figure 16 shows that around 54 percent of SMEs in industry actually demand credit; corresponding rates for SMEs in retail trade and services are 48 percent and 43 percent, respectively. Credit approval rates are very high (around 95 percent), Most credit is used for working capital, and only a small fraction goes to acquiring machinery or debt consolidation (Panel B). Indeed, recent assessments by users suggest that SME access to short and medium-term credit is presently indeed quite satisfactory, but that is not the case for longer-term credit for investment (see below).

Figure 16. Percentage of Pymes (SMEs) that Asked for and Obtained Credit

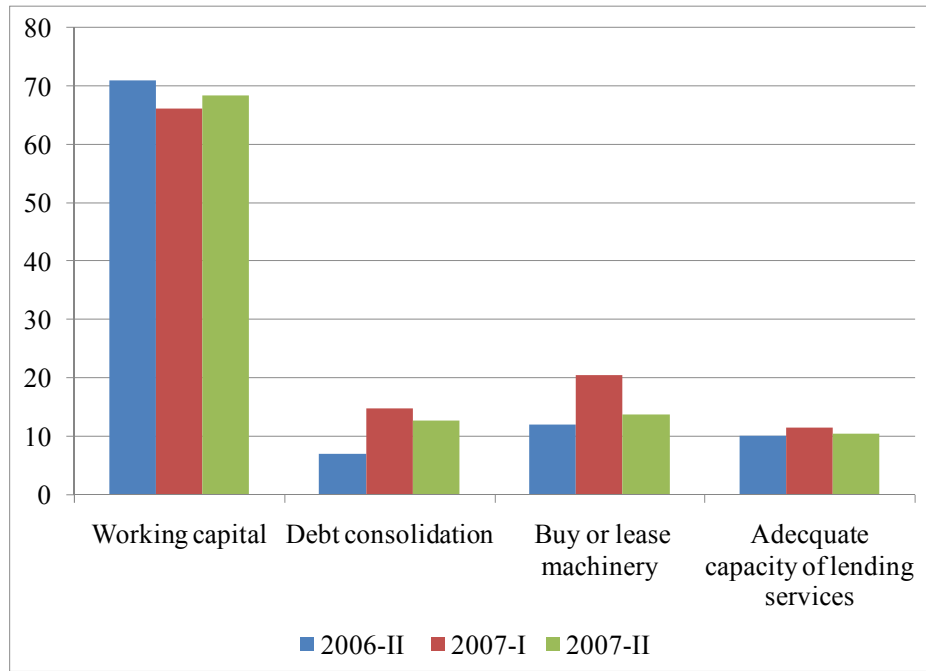
a. Share of SMEs that Demand credit



Source: ANIF SME Survey and authors' estimates.⁸²

⁸² ANIF in association with Bancoldex, BID y Banco de la República

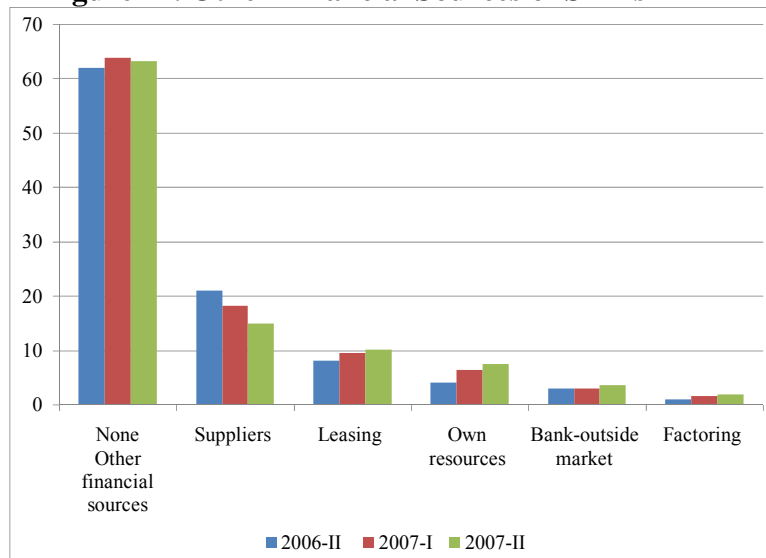
b. Use of SME Credit



Source: ANIF SME Survey and authors' estimates.

Figure 17 shows the use of other sources of financial resources by SMEs. It is to be noted that use of leasing and factoring is quite low, as compared to what happens in other countries. Also, as in other countries, access to capital markets is quite limited.

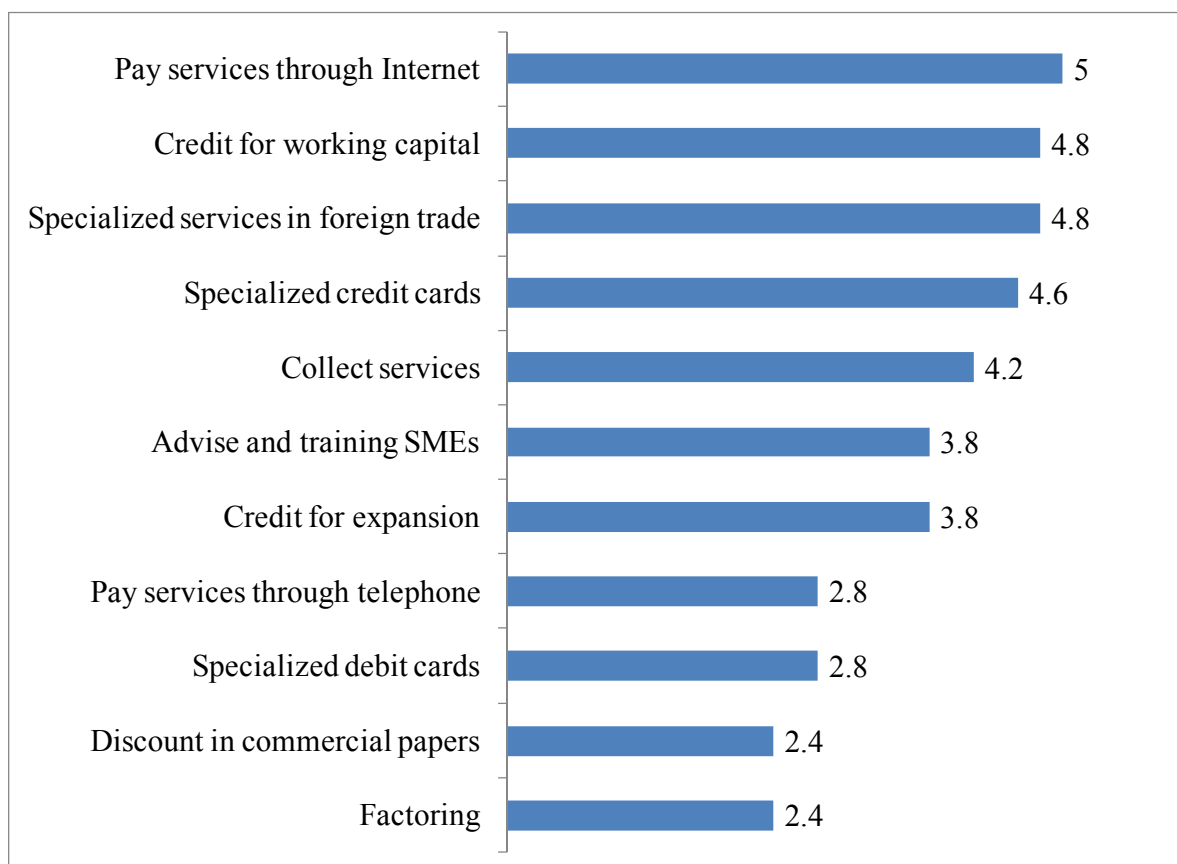
Figure 17. Other Financial Sources of SMEs



Source: ANIF SME Survey and authors' calculations.

The Asobancaria SME Survey suggests that working capital is well supplied; that credit for investment is somewhat more limited; and that factoring services are quite underdeveloped (Figure 18). A recent Fedesarrollo study on the subject came to similar conclusions.⁸³ In contrast, a comparative study by IDB (2006) indicated that Colombia was well behind other Latin American countries such as Argentina and Chile in the development of risk capital funds and “angel” investors.⁸⁴ Given the increasingly recognized importance of private equity funds for emerging successful micro and small enterprises, Bancoldex has recently launched a promising Fund of Funds initiative in this regard.⁸⁵

Figure 18. Adequacy of Access to Financial and Other Services by SMEs



Sources: Asobancaria SME Survey (2007).

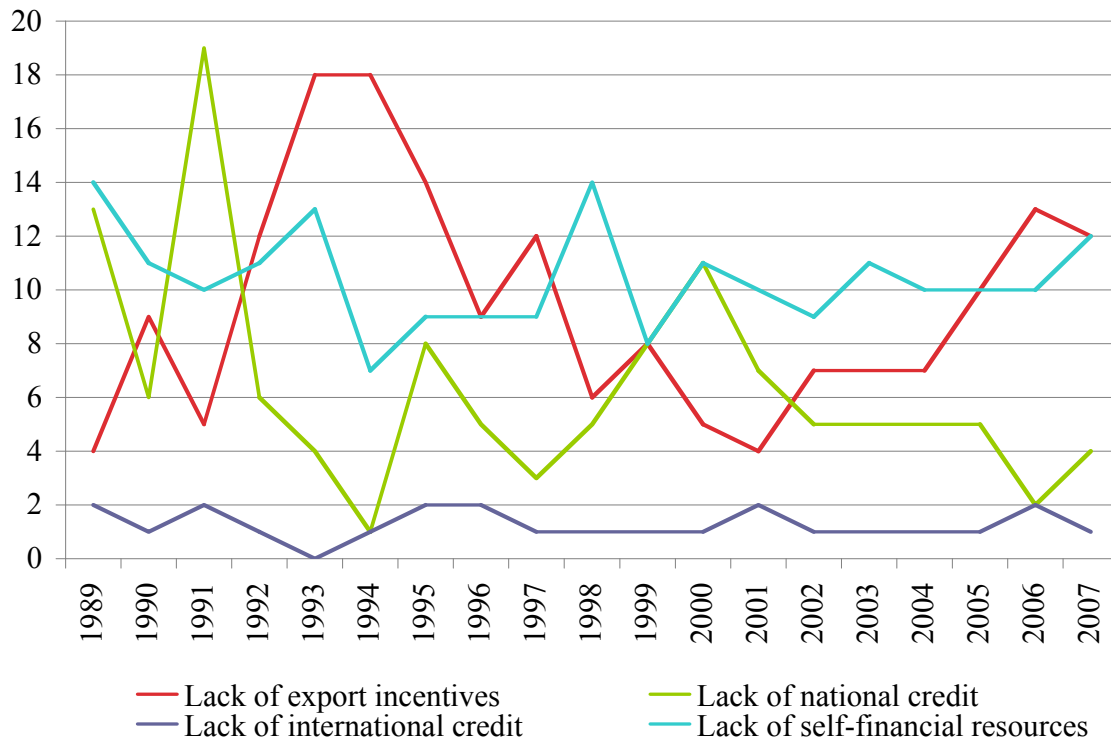
⁸³ Salazar and Guerra (2007).

⁸⁴ IDB (2006).

4.3.4 Assessments by Firms Responding to the Fedesarrollo 2008 EOS

Previous Fedesarrollo EOSs coincide with previous indicators that the importance of restrictions on access and cost of credit as a constraint to investment has been rapidly diminishing, as shown in Figure 19.

Figure 19. Impediments to Investment, 1989-2007



Source: Fedesarrollo EOS, annual investment module.

The module added to the EOS for this study found that lack of access to credit is not an important concern for small firms. However, cost of credit is still mentioned by around 21 percent of small firms as their main restriction on investment, and by 12.5 percent as the second most important restriction. The corresponding figures for medium-sized firms are 14.7 percent and 18.9 percent, and for large firms 11.9 percent and 13.5 percent. Access to risk capital also appears as a significant restriction for small firms; 6.8 percent indicated it was their main restriction, as compared to 1.1 percent and 0.9 percent among large and medium-sized firms, respectively.

Around 64 percent of small firms reported using Bancoldex credit, 29 percent official agricultural credit and 23 percent FNG guarantees. Use of Bancoldex credit increased over time, while official agricultural credit diminished.

**Table 15. Use of Official Credit Lines
(percentage of total firms responding each period)**

Policy instrument	Before 1990	1990 to 2000	2000 to present
IFI credit lines	45	44	12
Bancoldex credit lines	48	54	64
Finagro, Caja Agraria o Banco Agrario credit lines	35	33	29
Collateral obtained through Fondo de Garant'as	25	26	23
Export insurance or other insurance with government support	31	30	30
Exchange-rate hedging with government support	25	23	26

Source: Fedesarrollo EOS, October 2008.

Table 16 indicates that a high proportion of firms (39 percent) currently assess official agricultural credit lines as not adequate for their needs. These percentages are much lower in the case of Bancoldex lines (16 percent) and FNG guarantees (29 percent). There have been significant improvements in perception of adequacy of FNG guarantees over time, and more modest improvement with respect to Bancoldex lines, in contrast to a deterioration of opinion on agricultural official lines and former IFI lines.

These assessments vary significantly in some cases by size of firm. The share of large firms that view Bancoldex lines as “excellent” is much larger than in the case of small firms, reflecting remaining difficulties of SMEs in accessing export credit. In contrast, the share of small firms that view FNG guarantees and agricultural official lines as “excellent” or “good” is much larger than in the case of large firms, indicating that these services are proportionally more important for small firms.

Table 16. Percentage of Firms Rating Instruments as Inadequate

Policy instrument	Before 1990	1990 to 2000	2000 to present
IFI credit lines	17	16	38
Bancoldex credit lines	24	11	16
Finagro, Caja Agraria o Banco Agrario credit lines	27	27	39
Collateral obtained through Fondo de Garantías	43	36	29
Export insurance or other insurance with government support	69	48	38
Exchange-rate hedging with government support	65	61	54

Source: Fedesarrollo EOS, October 2008.

4.3.5 *Conclusion*

Market failures in financial sectors are widely recognized. There is, however, less agreement on interventions to support SMEs' access to credit. In this section we take the position that those interventions that facilitate access to credit to many small firms with growth potential, while avoiding subsidizing credit to small firms with no or low growth potential (Type II errors), may have a positive social cost-benefit ratio. In this context, we find that Colombian policy has moved from highly inefficient interventions (a dedicated public bank and highly subsidized rediscount credit lines) towards more efficient and effective interventions.

In particular, we argue that FNG guarantees seem to focus well, as a second best policy, on a specific observable market failure (many small firms with growth potential lack access because there is credit rationing through use of collateral). We further show that the growth in the combined use of FNG guarantees and Bancoldex rediscount lines has facilitated a fast increase in credit to SMEs in recent years (admittedly in a context of high liquidity and economic growth), to the point that access to credit is no longer seen as a major restriction for investment (though cost still is for many). Eliminating regulatory hurdles has also contributed to the recent growth in microcredit by commercial banks. While the rationale for rediscount lines is more tenuous, the fact that credit risk is retained by commercial banks (and partially by FNG) and that there are no explicit subsidies (though possibly some implicit subsidies through the use of Bancoldex official capital and multilateral credit lines), limits the possibilities of high distortions.

5. Vertical PDP Case Studies

Colombia's approach to PDPs has been highly sector-specific. This is true in regard to trade policies and is also readily evident in a tax system that over the years has been plagued by sector-specific incentives which have been, along with tariffs, the most important policy instruments used by the Colombian government to encourage productive growth. In 2004, the National Economic and Social Policy Council (CONPES) calculated that income tax benefits granted to specific sectors or activities amounted that year to about 1.41 percent of GDP (\$1,520 million).⁸⁶ The legislation resulting in this value is still in place.⁸⁷ Table 17 provides a sense of the history of income tax rate dispersion across sectors by depicting manufacturing between 1993 and 2007.

Table 17. Average Effective Income Tax by Manufacturing Sector

3-digit ISIC	1993-1999		2000-2007	
	Mean effective tax rate	Std. Dev, of tax rate	Mean effective tax rate	Std. Dev, of tax rate
Food products	24.7	1.5	26.8	2.4
Tobacco	19.1	6.9	28.9	5.1
Textiles	21.6	4.0	33.2	1.1
Wearing apparel, except footwear	26.8	2.8	29.0	0.8
Leather products	26.8	3.1	32.2	1.8
Footwear except rubber or plastic	25.7	5.6	33.3	1.0
Wood products, except furniture	23.2	3.7	31.4	3.6
Furniture, except metal	30.3	3.0	31.0	5.7
Paper and products	20.3	5.7	17.0	3.5
Printing and publishing	19.5	0.9	29.8	4.3
Industrial chemicals	27.5	1.7	28.2	2.3
Other chemicals	29.1	1.8	29.2	1.9
Miscellaneous petroleum and coal prod	24.6	7.7	32.1	5.6
Pottery, china, earthenware	19.9	5.9	17.4	11.7
Other non-metallic mineral products	20.9	2.8	31.4	3.6
Iron and steel	24.3	3.5	29.3	4.7
Nonferrous metals	26.7	2.0	26.0	3.7
Fabricated metal products	27.2	2.2	33.5	1.0
Machinery, no electric	27.7	3.1	32.7	1.9
Transport equipment	25.8	3.5	30.5	6.2
Other industries	27.5	2.2	29.9	1.8
Total manufacturing	24.7	3.5	29.2	3.5

Source: Ministry of Finance (DIAN) and authors' calculations.

⁸⁶ Source: CONPES (2004) Policy Document No.3280.

⁸⁷ Law 788 of 2002 granted tax incentives for investment including income tax exemptions to water transportation services and wind energy and biomass energy generation (over 15 years), hotel services (over 30 years), ecotourism (over 20 years), and software (over 10 years), among others. Law 863 of 2003 allowed deduction of fixed assets investments from taxable income.

Protectionism dominated the PDP system until 1991, and despite the fact that the country went through trade liberalization in the early 1990s and a number of other types of PDPs are in place, protectionist practices remain widespread. In manufacturing, high tariff levels were maintained until liberalization. Effective tariff rates went from an average of 38 percent over the period 1980-89 to 15 percent in the 1990s, and have remained close to that level during the present decade, but liberalization was not uniform across sectors and in many cases was partially reversed later on through renewed tariff rate hikes. Table 18 shows tariff dispersion across manufacturing sectors.

Table 18. Average Tariff Rates by Manufacturing Sector

3-digit ISIC	1980-1989		1990-1999		2000-2007	
	Mean Tariff Rates	St. Dev. of Tariff Rates	Mean Tariff Rates	St. Dev. of Tariff Rates	Mean Tariff Rates	St. Dev. of Tariff Rates
Food products	35.4	15.5	20.8	8.6	18.2	3.7
Beverages	60.0	20.1	18.2	9.1	18.2	2.9
Tobacco	34.2	15.8	16.3	12.0	18.0	3.0
Textiles	59.9	29.6	20.0	7.4	17.9	3.4
Wearing apparel, except footwear	80.0	32.0	22.4	6.7	19.8	0.8
Leather products	41.8	23.8	16.2	9.8	13.3	5.7
Footwear except rubber or plastic	67.8	23.0	22.5	8.0	19.2	1.8
Wood products, except furniture	45.1	18.7	15.8	8.3	13.3	3.8
Furniture, except metal	52.5	14.2	21.2	6.1	18.3	3.6
Paper and products	33.6	12.4	13.9	7.9	12.2	4.9
Printing and publishing	34.7	24.4	15.6	11.6	13.8	8.4
Industrial chemicals	21.8	9.9	7.9	5.6	6.2	3.7
Other chemicals	20.3	15.8	10.0	7.2	8.8	4.8
Petroleum refineries	12.6	7.7	8.3	4.3	8.1	3.3
Miscellaneous petroleum and coal products	21.6	8.4	9.9	5.5	8.1	3.0
Rubber products	39.7	21.3	16.1	7.5	13.8	3.9
Plastic products	57.5	17.6	19.6	6.5	18.3	4.0
Pottery, china, earthenware	49.7	23.5	19.4	9.7	16.3	3.5
Glass and products	32.4	11.1	15.2	8.7	12.9	4.6
Other non-metallic mineral products	30.3	9.5	15.3	6.6	13.1	3.5
Iron and steel	21.0	9.1	8.8	5.1	8.4	3.5
Nonferrous metals	20.5	10.6	7.9	4.9	7.0	2.9
Fabricated metal products	39.5	12.9	16.0	7.5	13.9	4.4
Machinery, no electric	23.0	18.4	9.6	6.4	9.2	4.9
Machinery, electric	33.5	20.7	11.5	7.5	10.3	5.6
Transport equipment	36.5	39.2	14.2	12.1	12.4	8.2
Professional and scientific equipment	25.2	13.4	8.5	6.1	7.4	4.3
Other industries	42.2	16.7	18.4	8.9	15.6	5.7

Source: DNP, Dirección de Desarrollo Empresarial.

Sector-specific incentives have not, however, been explicitly mentioned in public until recently, as Colombia has historically maintained the fiction that there is no industrial policy targeting incentives to particular sectors. This has resulted in lack of transparency about the way benefits are granted, and in substantial capture by economic groups of politicians and other actors that participate in the policymaking process. Our hypothesis is that targeted policies in Colombia in general have not followed a market failure rationale. Their implicit logic has rather been one of defending the rents of particular groups. The pervasiveness of rough and inefficient instruments, such as permanent tariffs and income tax exemptions, suggests that this is indeed the case and that, in most cases, the cumulative interventions have basically been the result of effective lobbying. Moreover, policies meant to be horizontal have rarely been purely horizontal, as benefits have concentrated in the same hands over time. To explore these ideas, we will review the experience of two manufacturing sectors that over the years have been and remain the object of extensive government intervention under different combinations of targeted PDPs: Textiles and Wearing Apparel, and Palm Oil.

In 2008, however, the Colombian government made explicit its interest in promoting particular sectors and compiled tentative lists of sectors for targeted policies that fall more under this type of rationale. Software falls in this category and has already participated in the design of a Business Plan, the recently introduced policy instrument through which the government intends to bring together the efforts of all relevant government institutions and the private sector to facilitate the sector's development. We will use this case to explore to what extent the more recent sector-specific policies indeed follow a different logic than earlier PDPs.

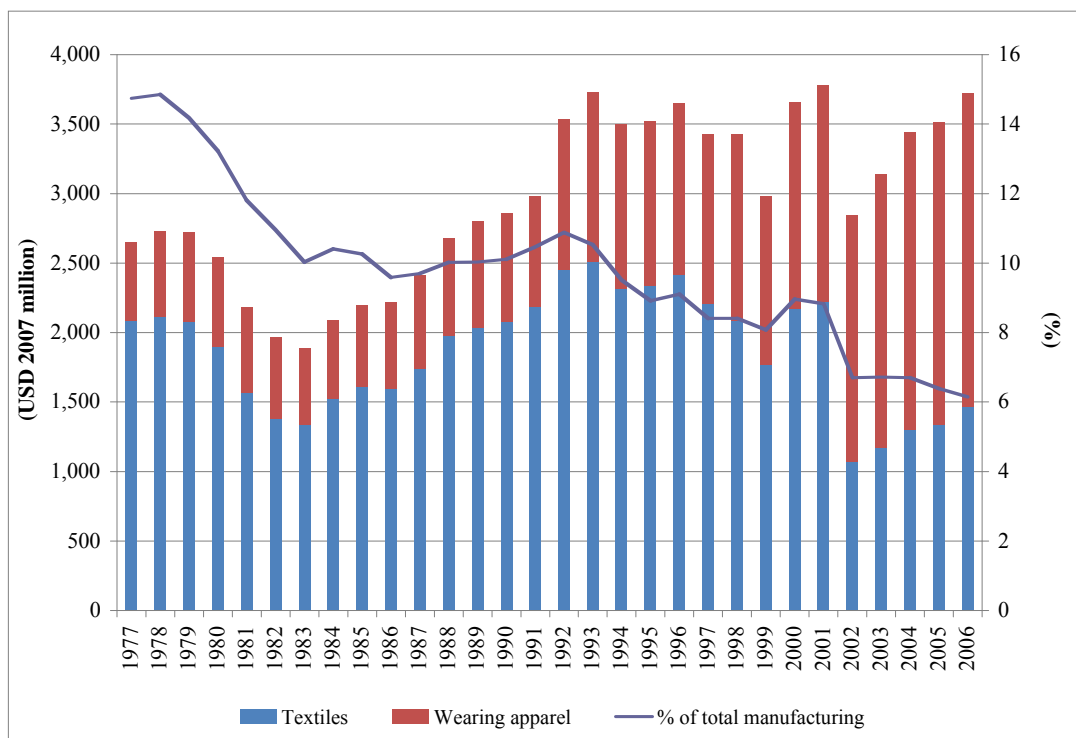
We intend to connect policies and policy instruments to their underlying rationality, to identify if there are market failures particular to the sectors under review and to establish whether the targeted policies in place have chosen the right instruments, have an adequate design and have been useful to address them. We also establish their connection with the productive activity of each of these sectors by considering them against the observed sector dynamics.

5.1 Textiles and Apparel

5.1.1 Sector Performance

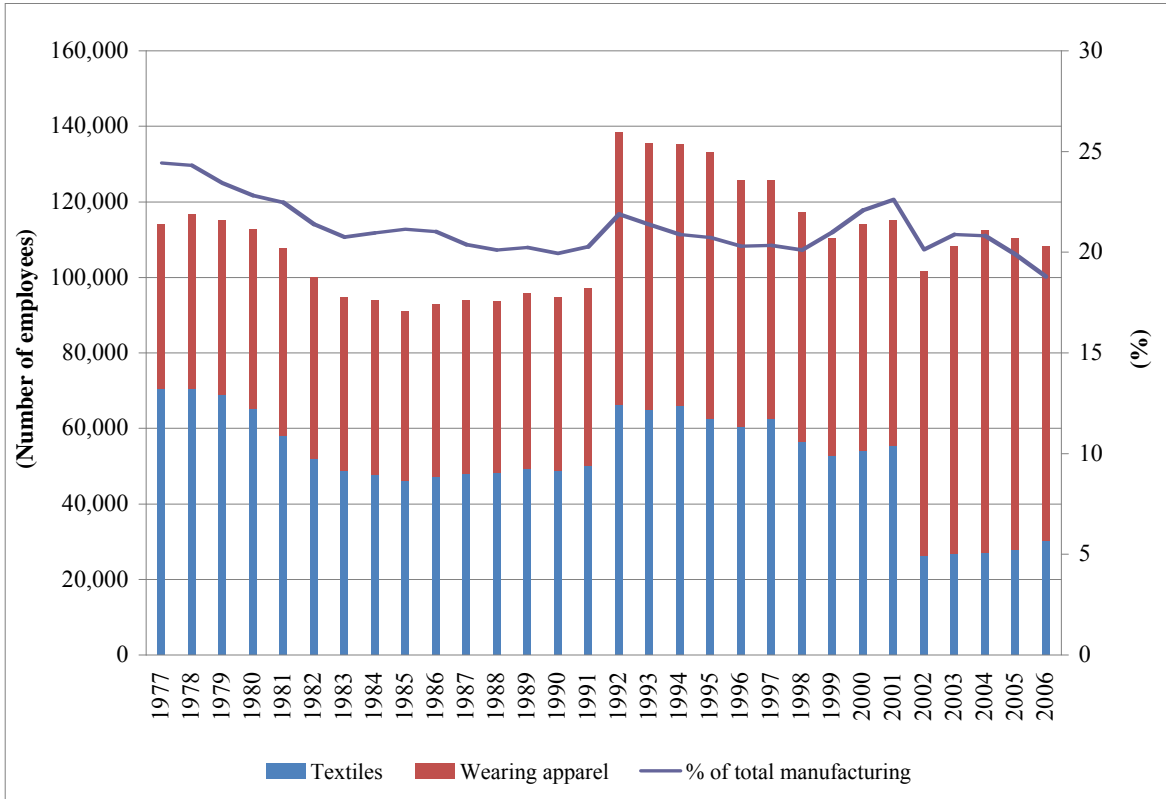
The ISIC 2-digit Textiles and Apparel sector represents 6 percent of Colombian manufacturing in terms of output and 19 percent in terms of employment. Figures 20 and 21 show the sector's dynamics since 1977 in terms of these variables. Figure 20 shows a good growth rhythm in the 1980s and early 1990s, followed by negative average growth rate between 1993 and 2002, and then recovery at a good pace until 2006, following the overall economy cycles. The picture is quite different, however, when the Textiles and Apparel sub-sectors are considered separately. While the Textiles subsector has contracted over time, Apparel has grown steadily since 1999. As a share of total manufacturing output, however, the sector has been falling since 1992. The sector's share of employment is more stable, but despite two small recovery episodes, employment shows a negative trend after 1993, explained wholly by the shrinking of the Textiles sub-sector. The jump in 1992 in Figure 21, while more noticeable in the employment series, is common to all variables from DANE's Annual Manufacturing Survey and is due to methodological changes introduced into the survey in that year.

Figure 20. Output



Source: DANE, Annual Manufacturing Survey.

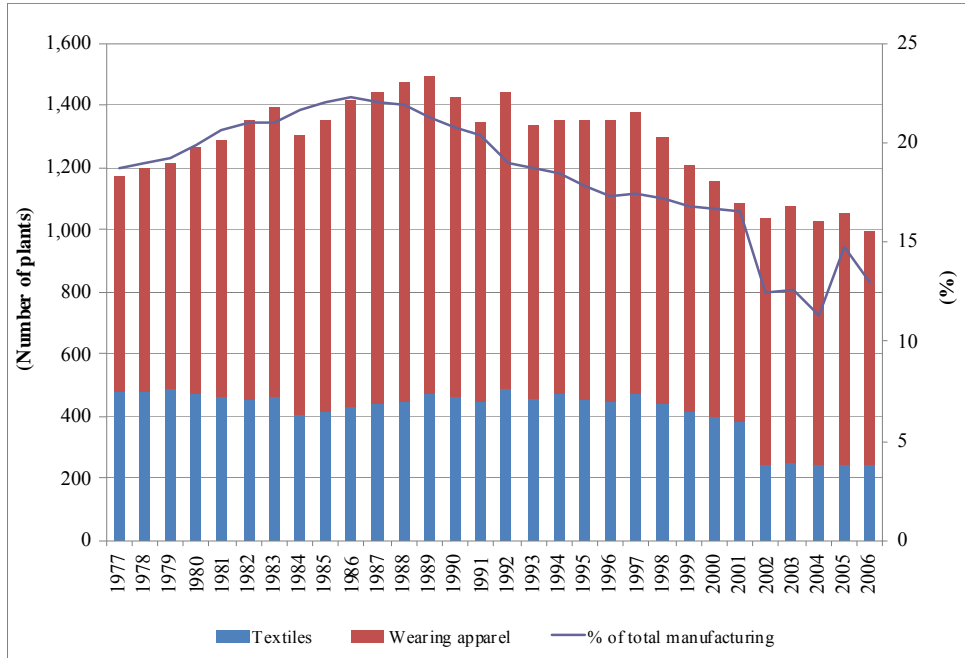
Figure 21. Employment



Source: DANE, Annual Manufacturing Survey.

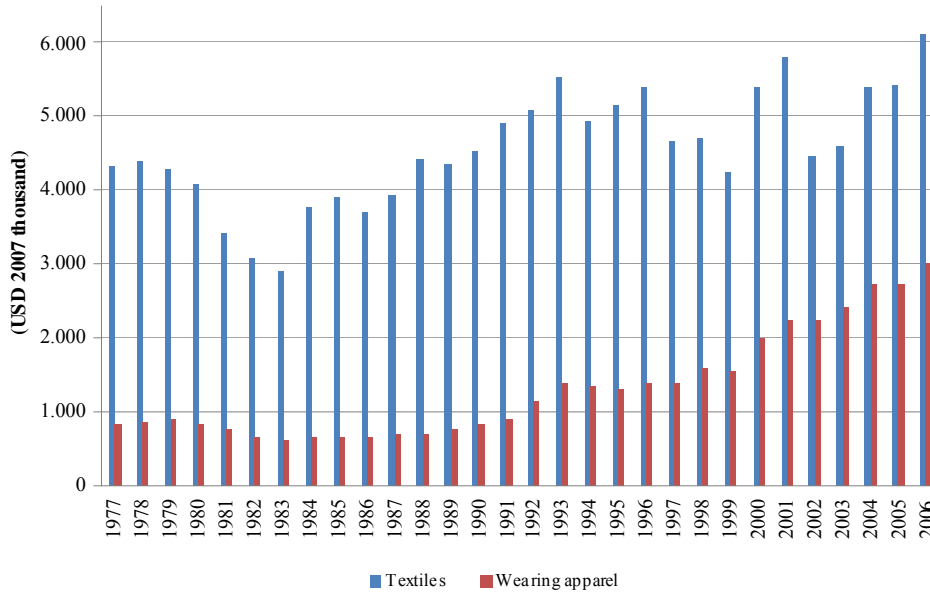
Figure 22 shows that the Textiles sub-sector’s decreasing trend is explained by substantial exit of productive units between 1998 and 2002, and little or no net entry after that year. The remaining plants are somewhat larger than before both in output and employment (see Figures 23 and 24). The Apparel sub-sector likewise shows no net entry of plants and an even more marked trend towards larger plants.

Figure 22. Number of Plants



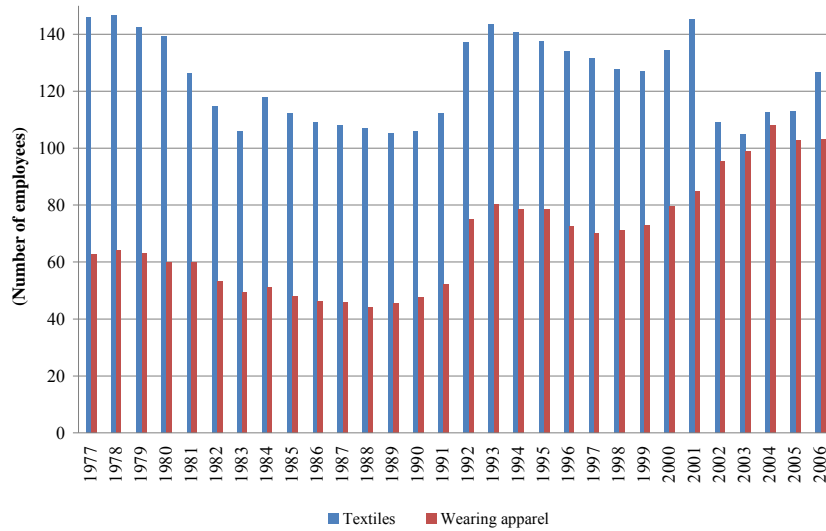
Source: DANE, Annual Manufacturing Survey.

Figure 23. Plant Size by Output



Source: DANE, Annual Manufacturing Survey.

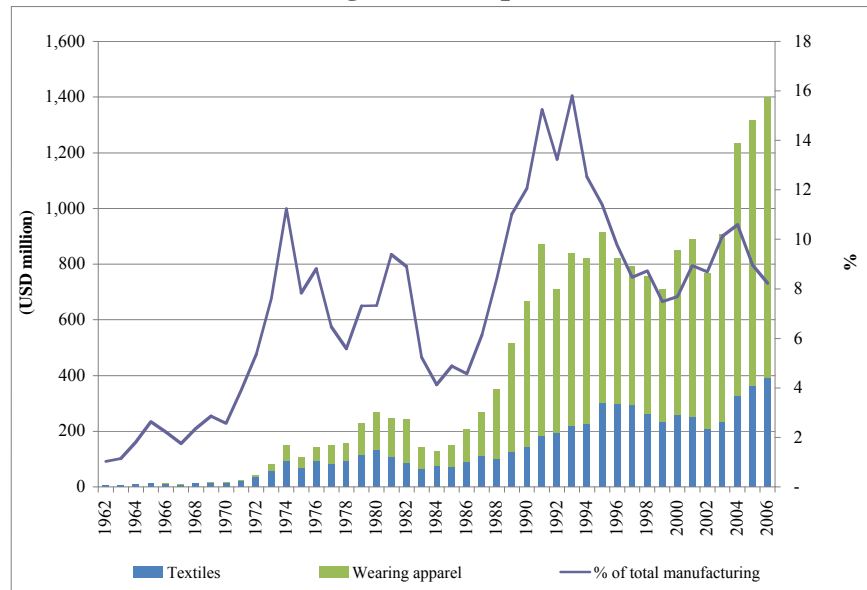
Figure 24. Plant Size by Employment



Source: DANE, Annual Manufacturing Survey.

The positive growth performance of wearing apparel is easily associated with its exports dynamics. Apparel exports grew at a good pace between the mid-1980s and the mid-1990s, then slowed down and seem to have picked up a good growth rhythm since 2002. As a share of total manufacturing exports, however, Textile and Apparel exports fell steadily in the 1990s and again started falling after 2004 (see Figure 25).

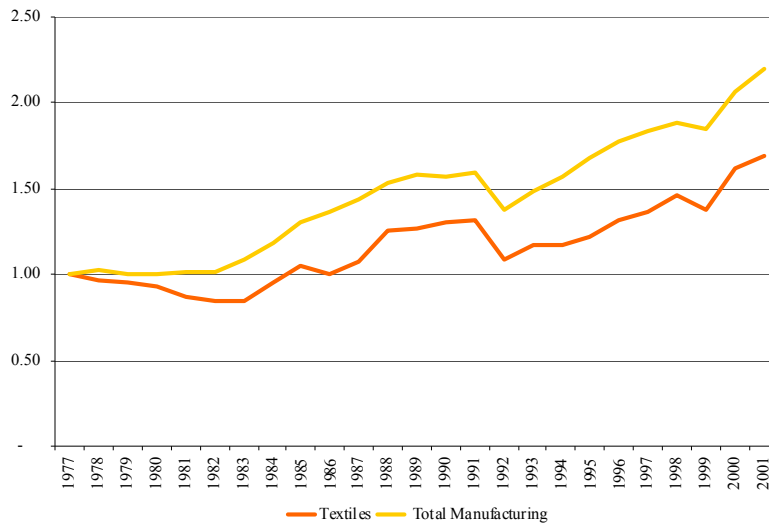
Figure 25. Exports



Source: DANE.

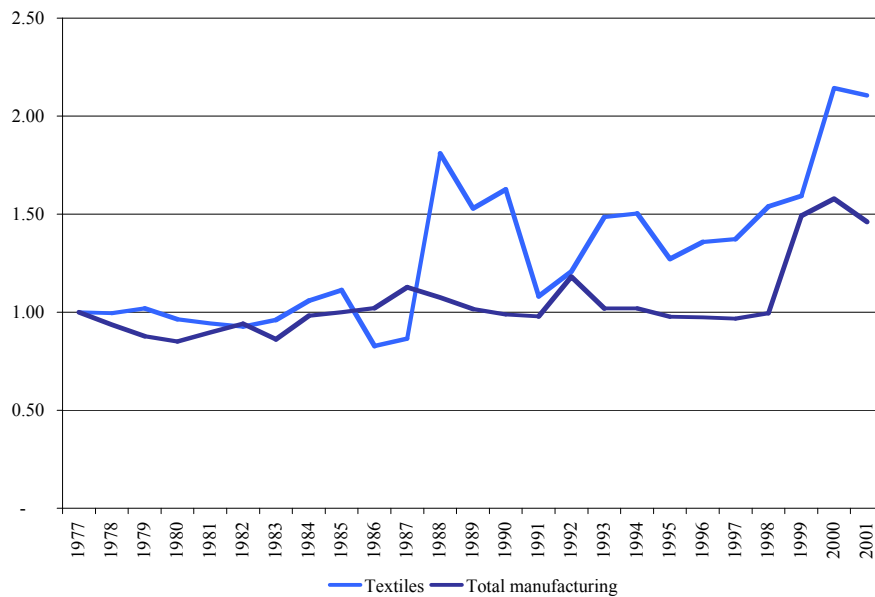
Finally, while with regards to labor productivity growth the Textiles and Apparel sector has underperformed relative to the average of manufacturing (see Figure 26), it has performed notably better with respect to growth in total factor productivity (TFP), as shown in Figure 27. Annual average TFP growth for the whole period is about 2.4 percent. This is not impressive, however, if productivity is to be the engine of economic growth.

Figure 26. Labor Productivity, 1977=1



Source: DANE, Annual Manufacturing Survey.

Figure 27. Total Factor Productivity



Source: Meléndez and Seim (2006).

5.1.2 Use of Policy Instruments

Can this sector's performance be in any way tracked back to the many PDPs it has been exposed to throughout the years? In this section we characterize the ways and extent to which the textiles sector has taken advantage of government aid, using the Fedesarrollo EOS module⁸⁸ and other sources of available data.

Table 19 shows the proportion of firms that report to have used each policy instrument available. We have grouped instruments or programs by broad categories, depending on their guiding policy objectives. We find a higher share of firms reporting use of most instruments since 2000. While there is a potential bias from a better recollection of the recent years, there seems to be an undeniable increasing trend in firm participation, probably triggered by a more proactive government in this last period.

Before 1990, export promotion policies were the more widely used. Arbeláez, Meléndez and León (2007) report that when asked about the role played by the government, exporting firms in the wearing apparel business stated there are two areas of policy in which the action of the government is recognized by the industry to have facilitated export activities: policies contributing to lowering the final price of the export products in the foreign markets, which has improved their ability to compete, and policies that contribute to meeting potential demand in foreign markets.

In the first category, preferential trade agreements appear to have played an important role in facilitating the competitiveness of the industry's products in foreign markets. The textile and apparel sector as a whole has been affected by i) the reorientation of the Andean Group (Colombia, Ecuador, Venezuela, Bolivia and Peru) towards a more open-doors integration model (1989-1993) that brought about the adoption of a common external tariff system by 1995; ii) the signing of the G3 trade agreement with Venezuela and Mexico (1994) to further the rapid insertion of the Colombian economy into the international markets; and most importantly iii) the signing of the Andean Trade Preference Agreement (ATPA, 1991) and later of the Andean Trade Promotion and Drug Eradication Act (ATPDEA, 2002), unilateral tariff preference agreements with the United States. Forty-five percent of firms report having used one or more of these agreements in the present decade.

⁸⁸ An update of the Fedesarrollo EOS figures for the Textiles sector is pending at the time of writing.

Table 19. Firms' Use of Policy Instruments

Policy instrument	Before 1990	1990 to 2000	2000 to present
Financial instruments			
IFI credit lines	15	25	5
Bancoldex credit lines	20	25	80
Finagro, Caja Agraria o Banco Agrario credit lines	15	15	20
Collateral obtained through Fondo de Garant'as	0	5	5
Export insurance or other insurance with government support	10	15	25
Exchange-rate hedging with government support	10	10	25
Export promotion instruments			
Cat or Cert.	20	25	25
Free export zones	20	30	35
Plan Vallejo	20	25	50
Market information	15	20	45
Fairs and events	15	20	55
Contact with potential clients	20	30	50
ATPA, ATPDEA or other special tariff agreement	20	25	45
Protection from foreign competition			
Tariff protection	20	20	45
Other form of protection	0	0	0
Technological Innovation			
Colciencias funds for technological innovation	15	15	15
Support from Corpoica or Fondos Parafiscales	15	15	20
Incubator program or similar	10	10	15
Tax incentives and/or subsidies			
Income tax exemption or deduction	20	20	50
VAT tax exemption or reduction	20	25	50
Direct subsidy	10	10	10
Training			
Basic training through SENA	15	20	55
Specific training through SENA	15	20	45
Training through other government owned institute	15	15	15
Training through private institute	15	15	20
Training within the firm	20	20	40
Other			
Quality certification program	15	20	30
Phitosanitary certification program	10	15	20
Red tape reduction program	15	20	40

Source: Fedesarrollo, EOS, October 2008, PDP Module.

In the same category, Plan Vallejo, a program under which local industry is allowed to bypass tariffs when importing inputs to be used in the production of exports, has also contributed to lower export costs. In practice Plan Vallejo not only affects the prices paid for imported inputs, but also those of local competitors selling to exporters. While such a program is unnecessary under an open market regime, it has remained useful to the industry as the local market for inputs continues to be protected. 20 to 25 percent of firms report having used it before 2000, and the share seems to have increased in more recent years.

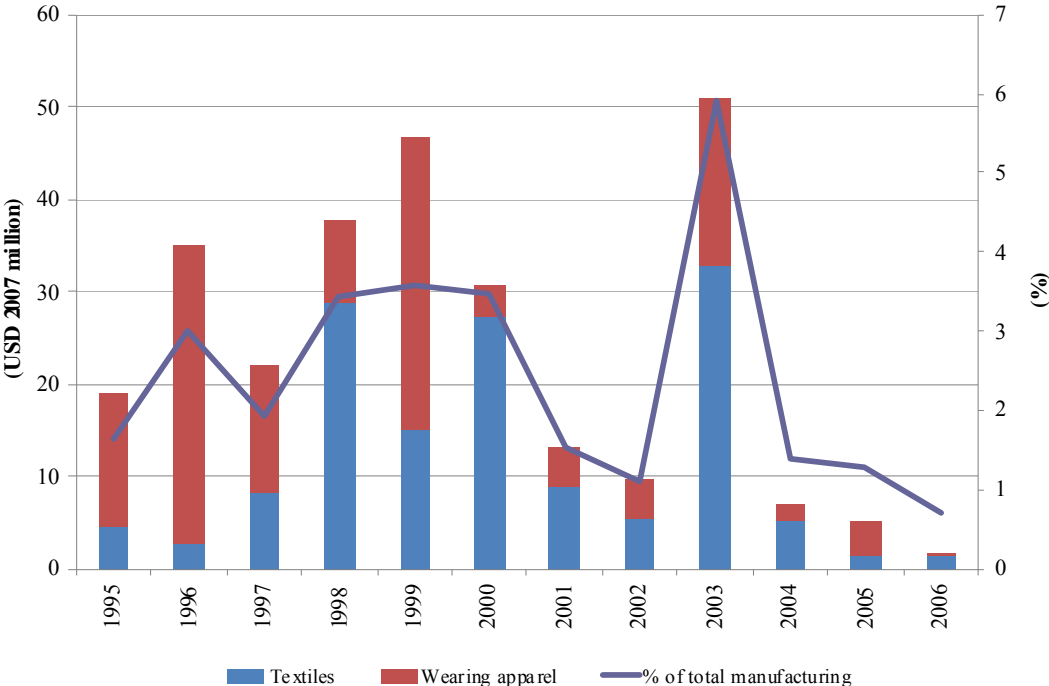
In the second category, policies that contribute to meeting potential demand in foreign markets, Proexport has in recent years played a proactive role as trade facilitator through its international offices. In particular it has facilitated the interaction of potential buyers (department stores, specialty stores and others) with the potential sellers, often represented by the country's

larger apparel firms. While this is still an incipient effort on the government’s part, it is immensely valued by the industry and has apparently proved useful in terms of materializing new business opportunities, particularly in the U.S. market (Arbeláez, Meléndez and León, 2007). Since 2000, 45 percent of firms report having benefited from market information and 55 percent report having participated in fairs.

Bancoldex credit (to exporters only until 1991 and to all producers after its merger with IFI) also reportedly reached 25 percent of all textile firms before 2000. The proportion has since risen to 80 percent. Figure 28 shows the evolution of Bancoldex Credit to the Textiles and Apparel sector since 1995. With the exception of 2006, when Textiles and Apparel accounted for 6 percent of all Bancoldex credit, financing from Bancoldex was more important prior to 2000. Since 2000, moreover, that financing gone primarily to the shrinking Textiles sub-sector.

Textiles and Apparel continues to receive a major share of CERTs, a tax subsidy to exporters, which has been set at different rates on exports for selected sectors. The amount received, however, is much smaller than in the past, as shown in Figure 29).

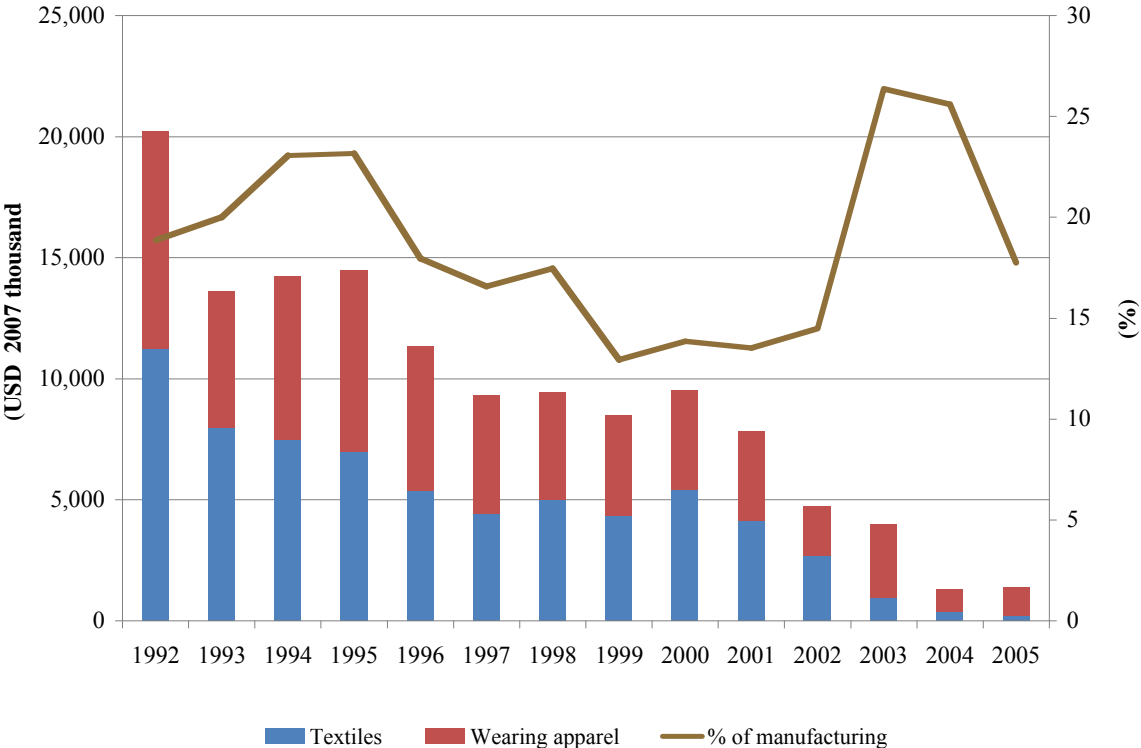
Figure 28. Bancoldex Credit



Source: Ministry of Industry and Trade and authors’ calculations.

The proportion of firms who report having used or benefited from tariff protection is also increasing over time, from 20 percent to 45 percent before and after 2000, respectively. This pattern of response probably comports with a perception of higher foreign competition in a context of increasing globalization in recent years, despite lower tariff protection. Figures 29 and 30 show the nominal and effective tariff rates over time.

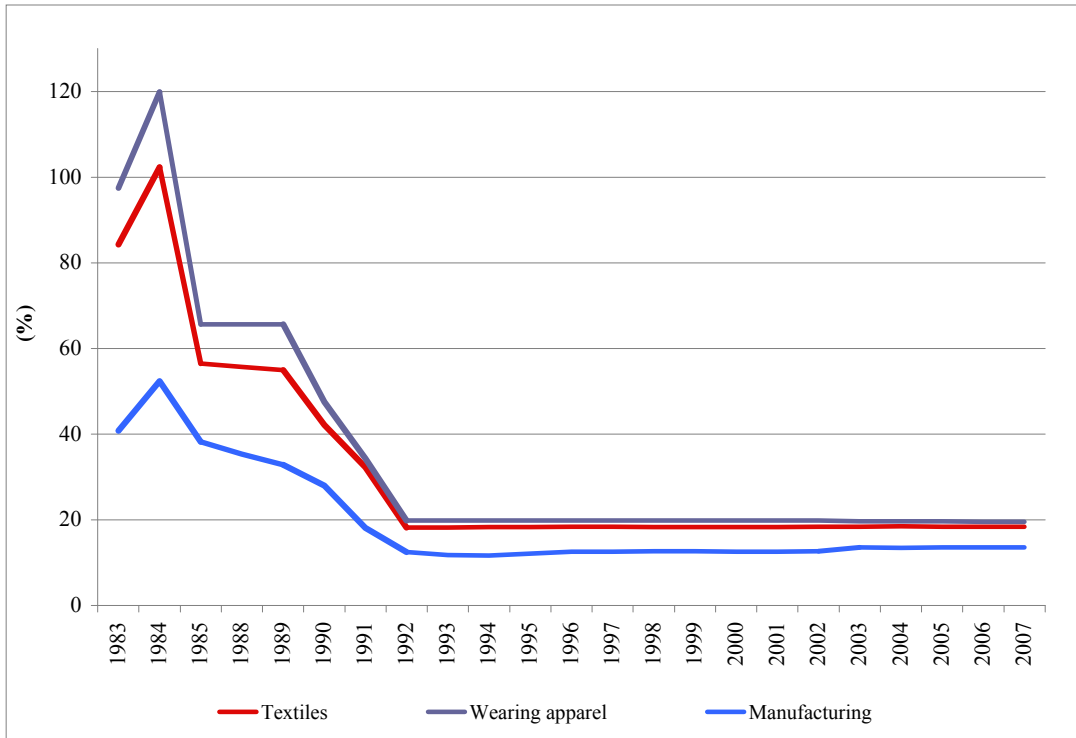
Figure 29. CERTs



Source: Ministry of Industry and Trade and authors' calculations.

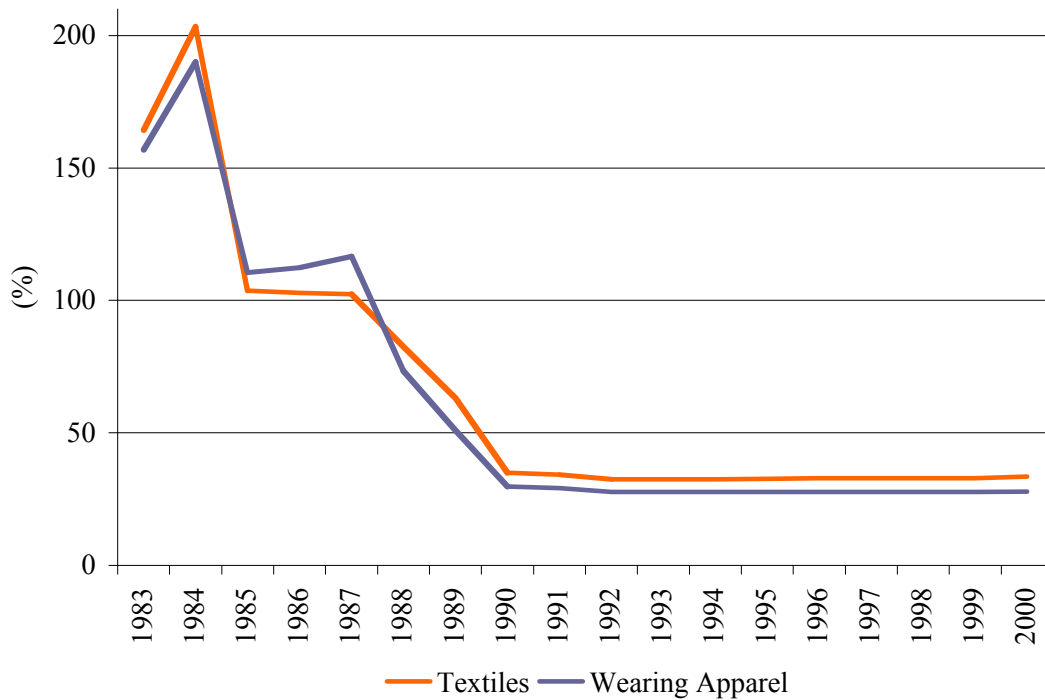
While tariff protection is much lower nowadays than it was in the 1980s, Textiles and Apparel remains protected above average manufacturing. The nominal tariffs shown in Figure 30 are around 20 percent, but effective protection is much higher (see Figure 31). In contrast, only 15 to 20 percent of firms report having benefited from the policy instruments in the Technological Innovation category.

Figure 30. Nominal Tariff Rates



Source: DNP, Dirección de Desarrollo Empresarial.

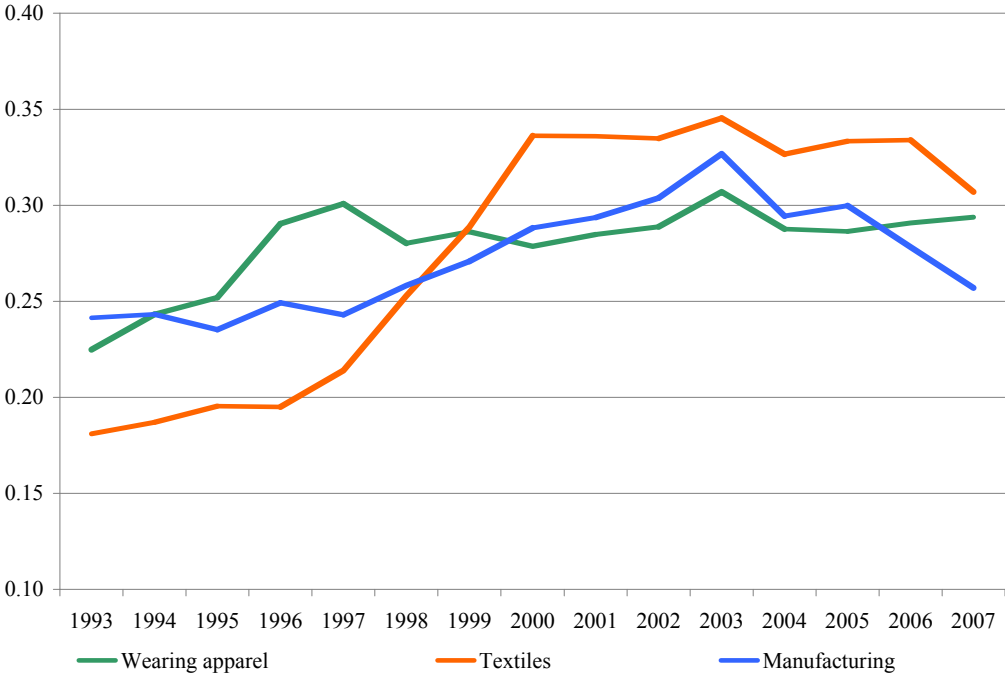
Figure 31. Effective Tariff Rates



Source: DNP and calculations by Rodrigo Moreira, Dirección de Desarrollo Empresarial.

With respect to tax incentives, the high proportion of firms that allegedly have benefited from this type of instruments after 2000 probably reflects the use of the tax reduction “for investment in fixed assets” introduced in 2004. Figure 32 shows the breaking point this measure introduced to the effective income tax rate that is obtained after multiplying the nominal income tax rate by the discount factor resulting from accounting for all exemptions and deductions.⁸⁹ In this context it should be noted that the nominal income tax rate in 2004 was 38.5 percent.

Figure 32. Effective Income Tax Rate



Source: DIAN and authors’ calculations. .

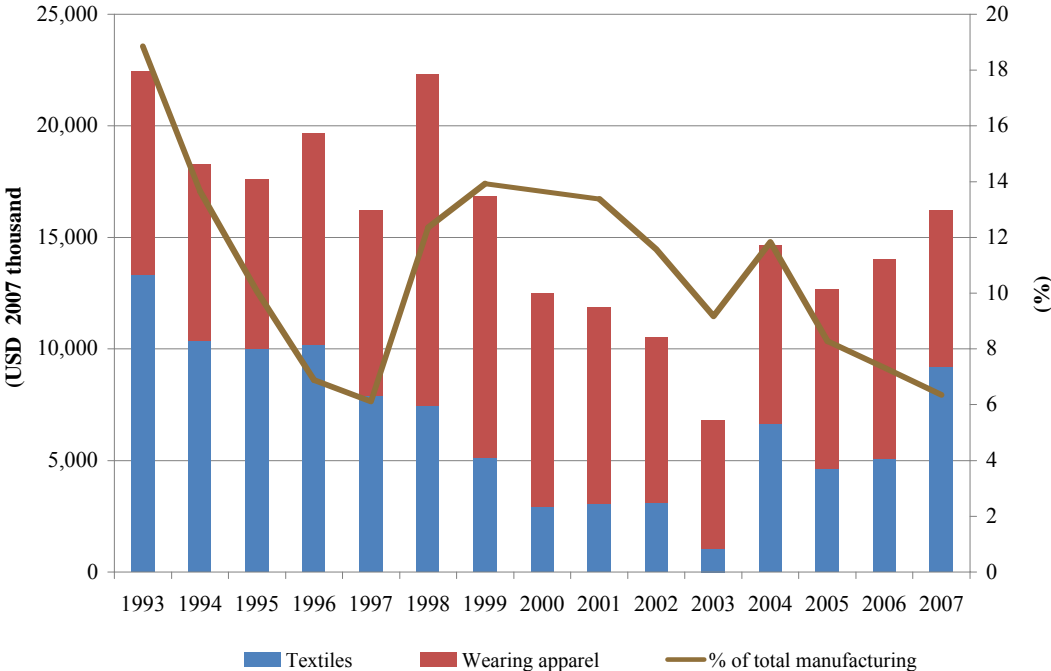
Since 1998 Apparel has had a much lower effective income tax rate than Textiles, with more deductions and exemptions. The former sub-sector is systematically below the manufacturing average on this account over the whole period, while the former is above. In value, however, tax deductions and exemptions to Textiles and Apparel peaked in 1998 and have since then been falling, despite increasing effective tax rates; the initial decline coincides with the recession of 1999. In 2004, those deduction and exemptions recover, reaching a value of more than twice the previous year, which is later sustained; this is the effect of the so-called

⁸⁹ Using the nominal tax rate we calculated the tax amount payable by each 3-digit ISIC after eliminating all tax deductions and exemptions. The discount factor is the ratio of this calculated tax and the actually paid.

investment deduction. Figure 33 shows that the Textiles sub-sector has taken greater advantage of this opportunity and has by several times multiplied its tax deductions from previous years.

Finally, firms report increasing use of general and specific training through SENA and of programs related to quality and control certification. They also report being increasingly affected over time by red tape reduction efforts. Table 20 presents a summary of the dynamics of both performance and policy use over time.

Figure 33. Income Tax Reductions and Exemptions



Source: DIAN and authors' calculations.

Table 20. Average Annual Growth Rates

	Output	Employment	Exports (USD)	Number of plants	Plant size by output	Plant size by number of employees	TFP	Labor productivity	Effective income tax rate	Tax reductions and exemptions in value	Nominal tariff rate	Effective tariff rate	Bancoldex credit	CERTs
Textiles														
1980-1990	0.9	-2.9	0.5	3.7	1.1	-2.7	5.4	3.9	-	-	-14.8	-14.8	-	-
1990-1995	2.4	5.1	16.2	-2.8	2.7	5.4	-4.8	-2.6	2.6	-9.1	0.2	-1.4	-	-11.3
1995-2000	-1.5	-2.9	-3.1	-1.0	0.9	-0.5	11.0	1.4	11.5	-21.8	0.0	0.6	42.9	-4.9
2000-2006	-6.3	-9.1	7.2	-5.1	2.1	-1.0	-	3.1	-0.1	-2.7	0.0	-	-39.3	-46.9
Wearing Apparel														
1980-1990	2.0	-0.4	14.7	4.3	0.0	-2.2	5.4	2.3	-	-	-16.0	-4.4	-	-
1990-1995	8.6	8.9	3.1	-1.7	10.1	10.5	-4.8	-0.3	3.9	-5.8	0.0	-11.4	-	-4.4
1995-2000	4.7	-3.2	-0.7	4.7	8.5	0.3	11.0	8.2	2.0	4.7	0.0	-22.2	-25.0	-11.4
2000-2006	7.2	4.4	9.3	2.7	7.1	4.4	-	2.6	0.7	-12.8	-0.3	-	-29.7	-22.2
Total Manufacturing														
1980-1990	4.0	-0.4	4.2	5.2	3.2	-1.2	1.5	4.4	-	-	-12.7	-9.2	-	-
1990-1995	6.9	6.2	7.7	2.8	4.7	4.0	-0.2	0.6	-0.9	13.7	0.3	-1.7	-	-12.6
1995-2000	0.6	-4.2	6.6	3.2	2.6	-2.4	10.0	5.1	4.2	-12.2	0.0	0.4	-5.5	1.9
2000-2006	6.8	1.8	7.4	6.7	5.0	0.1	-	4.9	-0.6	13.0	1.4	-	-18.7	-35.2

Source: DANE, Ministry of Industry and Trade, DIAN, DNP and authors' calculations.

5.1.3 Conclusions

If PDP design is to be evaluated based on there being a good match between reported market failures and policy instruments made available, then both general and specific training programs, as well as red tape reduction programs and financial instruments designed to reduce firms' financing costs, can be considered good policies. These are policies that can be tailored to particular sector-level needs, but which are in principle of horizontal character. Just as well, a request for lower taxes should be understood as a request for a horizontal policy and not for differential tax benefits.

The point to make here is that firms in the Textile and Apparel sector appear to be requesting horizontal policies as a response to the problems they face, which are often government failures transversal to all productive sectors. Sector-specific policies in the form of tax reductions or exemptions or import tariffs are thus bad policies to the extent they are not designed to solve the problems allegedly limiting investment. And they are also bad or useless costly policies when considered against firm performance. The Textiles sub-sector produced 399.3 thousand dollars more in output in 2006 than in 2002. During the same period it recovered 6185.7 thousand dollars in tax reductions and exemptions. This occurred while the Apparel sub-sector experienced substantial growth under higher income tax rates.

The Textile and Apparel sector experienced the higher average TFP growth after the recession of 1999, when a number of inefficient plants exited the industry. The review of this experience of permanent targeted government interventions in different shapes raises the concern of whether some low-productivity firms –particularly in the Textile sub-sector– have been kept artificially active, with a resulting detrimental effect on aggregate productivity, when in absence of these policies they would have closed operations.

5.2 Palm Oil

5.2.1 Sector Performance

Palm oil comes from the kernel and fruit of the African oil palm. In its crude form and in its “simple” refined form, palm oil is a commodity. Oils and fat with specific characteristics as well as biofuels can be obtained by further refinement, hydrogenation and mixtures, and sold in the market as differentiated products with value added. The oil palm itself is a perennial plant that

takes around two years to start production and another five years to reach its peak, remaining productive for over 50 years.

As shown in Figure 34, the total planted area of oil palm has grown steadily over time. Growth was particularly high, however, during the second half of the 1980s, when the planted area more than doubled. By 2006 oil palm plantations occupied more than 250 thousand acres, representing about 8 percent of all permanently cultivated land in Colombia. Subsequent output increases were accompanied by substantial productivity growth between 1992 and 2004. In recent years, however, yield per acre has deteriorated.

Figure 34. Palm Oil: Planted Area and Yield per Acre

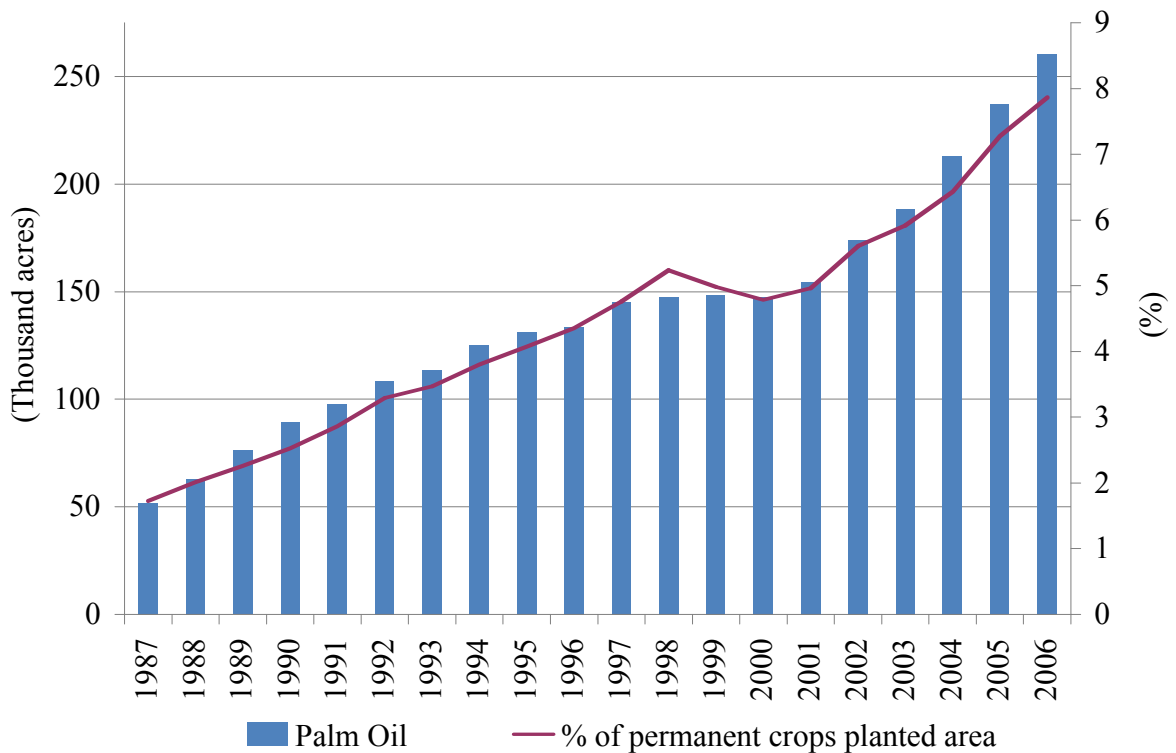
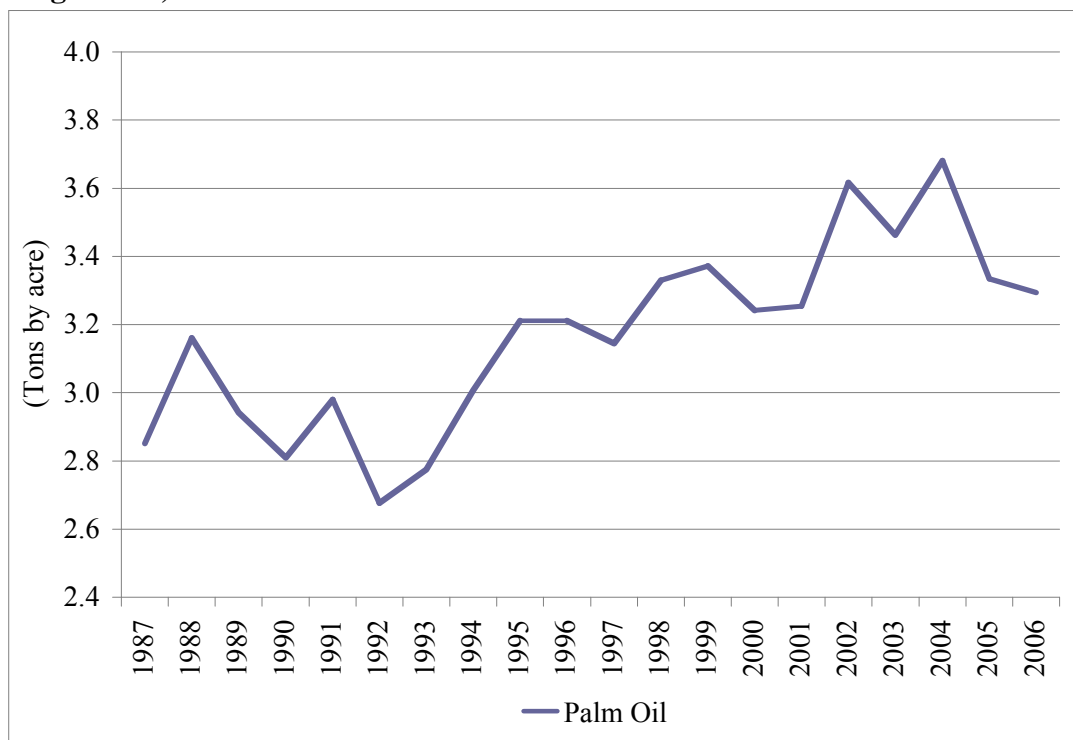


Figure 34., continued



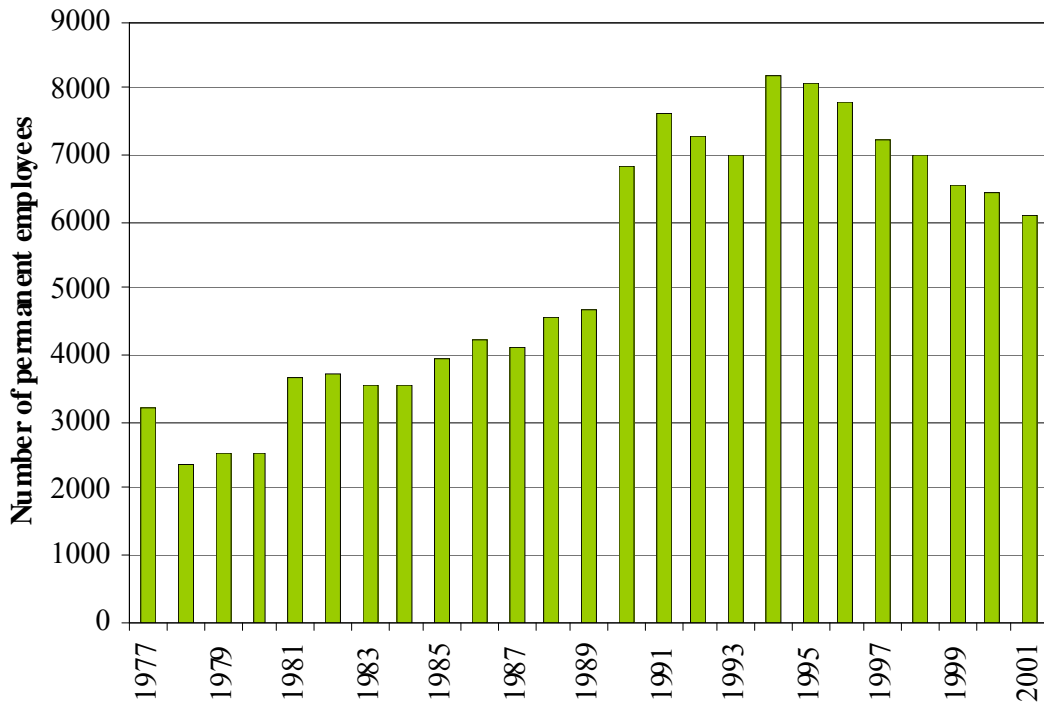
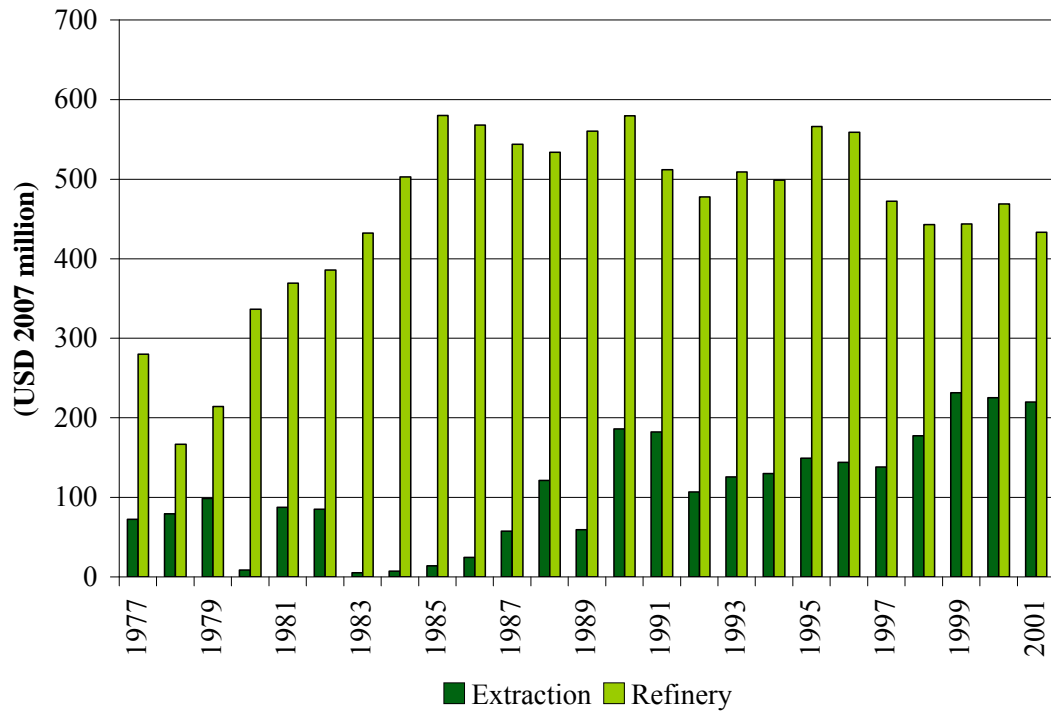
Source: Ministry of Agriculture.

The increase in oil palm cultivation was accompanied by substantial entry of extraction plants, which rose from two in 1983 to 26 in 2001,⁹⁰ with a noteworthy jump in the number of extraction plants in 1990. The pattern of refinery plants is quite different, with much less fluctuation and a decreasing tendency since 1994.

In terms of money value, the story of output growth is less appealing. The impressive growth rates shown above, in particular, do not reflect in the value of refinery activities, which follow a different dynamic. Employment in palm oil production has also been falling since 1995 (see Figure 35).

⁹⁰ Changes from ISIC Revision 2 to ISIC Revision 3 coding in the Annual Manufacturing Survey in 2002 prevent the series from this source from being updated.

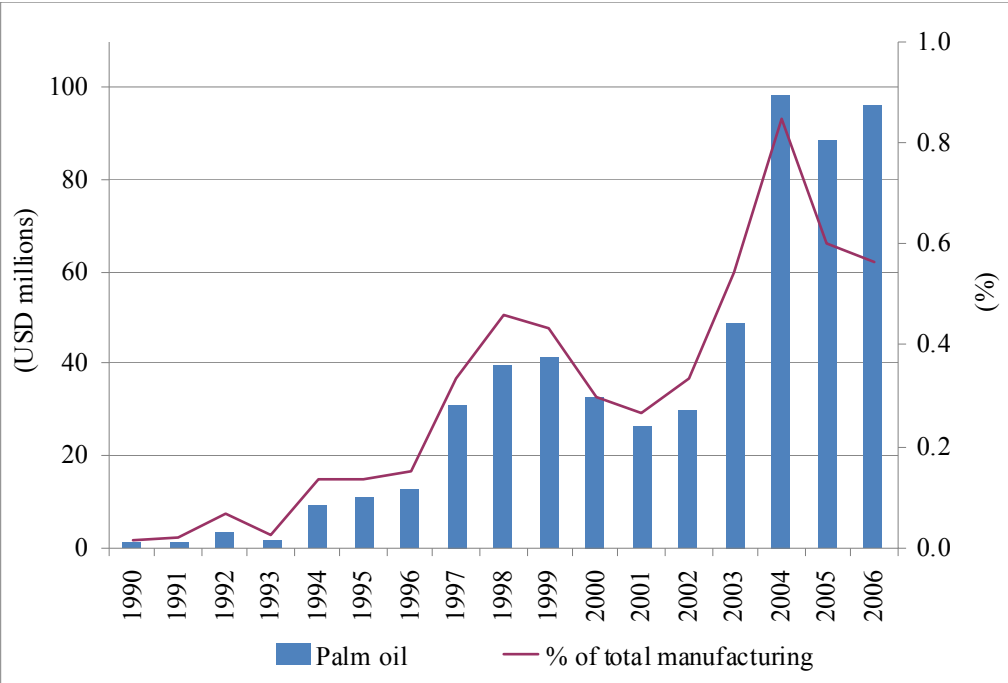
Figure 35. Output Value and Permanent Employment



Source: DANE, Annual Manufacturing Survey.

Finally, Figure 36 shows palm oil export dynamics since 1990. Exports took off only in 1994 and grew steadily until 1999, when they started to fall. Deterioration during the following years was, however, followed by recovery at even higher rates than in the previous period of positive growth and peaked in 2004. Exports again declined in 2005 and 2006.

Figure 36. Exports



Source: COMTRADE.

5.2.2 Use of Policy Instruments

Oil palm was introduced in Colombia in 1932, but its commercial expansion started only 20 years later as a result of government measures to promote economic growth based on import substitution. Under a government program to encourage oil crops, plantations were started in the Caribbean coastal plain, the Middle Magdalena Valley, the foothills of the Eastern Plains (Llanos Orientales) and the Southwest. The planted area tripled in the 1980s and palm oil became an important raw material in the productive chain of oilseeds, oils, and fats.

The government first promoted Oil Palm production in 1957 through an extension to oil palm of the Obligatory Absorption Law that subjected cotton imports to the clearance of local production in the market (Decree 290 of 1957). This regulation not only forced national

producers of oils and fats to buy all domestic oleaginous production in order to gain access to import licenses, but also granted special tax treatments to private investments in delayed yield crops. Almost simultaneously, Law 26 of 1959 determined that all commercial banks had to assign 15 percent of their deposits to the promotion of agriculture, livestock and fishing, and special credit lines were created for delayed-yield crops, from which the sector greatly benefited.

The measures described above were complemented by a plan of private/public joint ventures promoted by the government for plantations of 5 million square meters, and by technical support and seed distribution for smaller crops, often as part of a process of “directed colonization” by which lands were offered in exchange for entering oil palm agriculture in specific areas. The government implemented a diffusion campaign through written press and agricultural fairs, while simultaneously persuading experienced oil and fat producers to assemble extraction plants in the plantation areas that later proved vital for the success of Oil Palm plantations. In addition, research to foster oleaginous production in Colombia led to the planting of 100-150 mother-trees in order to supply high-value seeds. As is evident, the government actively participated in fostering the sector’s development.

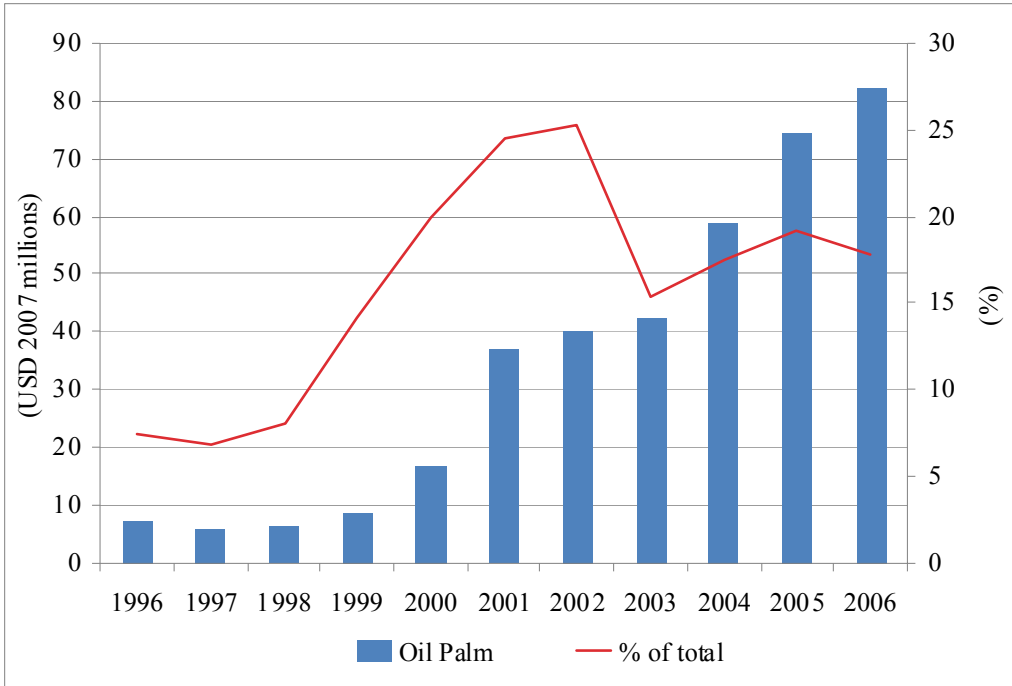
In 1963 several funds were created to handle resources destined to finance agricultural and industrial activities, the first of which was the Private Investments Fund (known by its Spanish acronym FIP). Of \$87 million dollars provided to the FIP by the Inter-American Development Agency, \$15 million was used to promote new oil palm plantations. Small farmers also had access to credit through Caja Agraria, the government-owned rural bank.

During the late 1960s and the 1970s, however, a change in the national development strategy towards export promotion, in combination with plant diseases and competition from other oil sources, slowed palm oil production. At the same time competition served to discipline producers and generate productivity gains through genetic progress, as well as foster cooperation.

In the 1980s, internal prices rose, taxes were reduced and financial support was increased, allowing producers to capitalize on their experience. Even though all efforts to stimulate production were directed towards developing the internal market to reduce Colombian dependency on foreign supply of oils, the boom of the 1980s resulted in excess production in the 1990s and led to exports.

Trade liberalization undertaken in the 1990s led to efforts to compensate for losses from higher exposure to foreign competition. In particular, various financial mechanisms to support agricultural products were put in place, from which oil palm greatly benefited. Figure 37 shows how Finagro’s investment and human capital credit lines for this product have increased in value, especially since 1999. As a percentage of total credits, Finagro’s oil palm financing peaked in 2002 at almost 25 percent of its credit. Oil palm thereafter became less important but remained significant, accounting for 18 percent of credits in 2006.

Figure 37. Credit from Finagro



Source: 2006 Agricultural Statistical Yearbook and authors’ calculations.

Several forms of government intervention have accompanied the observed growth of palm oil exports. Besides the support of local production described above, there are two policy areas that have proved critical for the sector’s performance: i) the adoption, in the context of trade liberalization in the 1990s, of a band-tariff system for a set of agricultural products including oil palm, and ii) the creation of a price stabilization fund to protect palm oil production and exports from international price fluctuations. These instruments were put in place in 1994 and 1996, respectively.

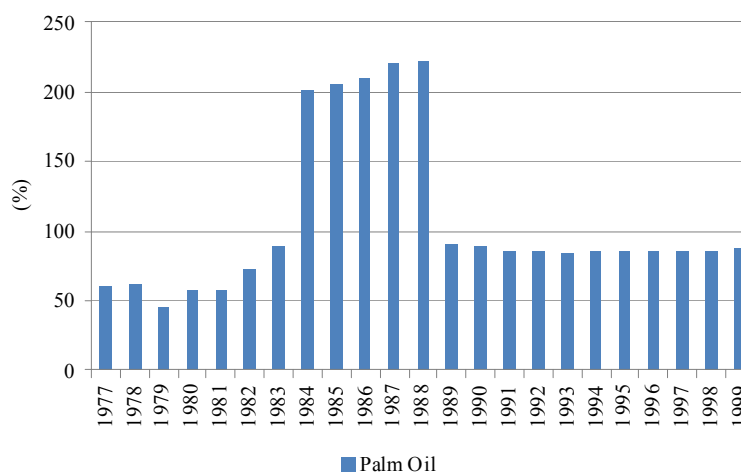
The band tariff system is a protection system by which variable tariff rates adjust as required to keep domestic prices within a reference price band. Prices are monitored constantly, and the floor and ceiling of the band are reviewed every six months. Table 21 shows the resulting average tariff rates under this system for the period 1996-2004. The nominal tariff rate to which these may be compared is 20 percent. Figure 38 shows effective tariffs for Palm Oil computed from nominal tariffs, before the band system is activated.

Table 21. Tariff Rates for Selected Agricultural Sectors 1996-2004 under the Band-Tariff System

Crop	Average tariff rates under band tariff system (%)								
	1996	1997	1998	1999	2000	2001	2002	2003	2004
Wheat	5.2	19.1	43.1	48.0	34.0	22.4	13.1	10.6	4.5
Barley	8.8	16.8	39.0	37.9	28.6	16.8	14.8	8.2	9.9
Yellow com	8.1	27.3	48.0	65.3	70.2	50.9	26.5	14.8	6.4
White com	4.4	19.9	32.6	49.3	67.5	35.5	16.8	6.9	6.9
Rice	17.0	21.5	21.1	45.6	69.7	79.8	49.3	32.2	19.8
Sorghum	8.1	27.3	48.0	65.3	70.2	50.9	26.5	14.8	6.4
Soybeans	3.7	6.0	24.8	56.1	39.6	38.5	25.4	10.8	0.2
Peanuts	3.7	6.0	24.8	56.1	39.6	38.5	25.4	10.8	0.2
Brown sugar	3.7	6.0	24.8	56.1	39.6	38.5	25.4	10.8	0.2
White sugar	22.4	25.2	55.6	106.9	72.0	41.2	68.8	43.2	42.7
Palm Oil	18.0	19.0	8.0	52.0	42.0	40.0	29.0	20.0	15.0

Source: Ministry of Agriculture.

Figure 38. Effective Tariff

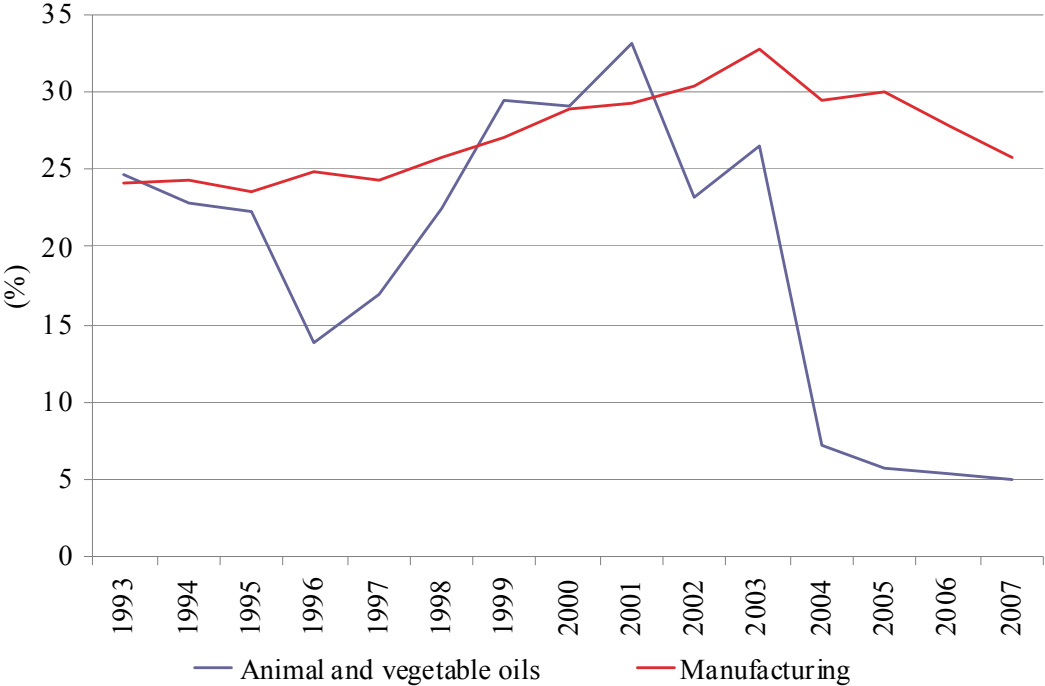


Source: DNP and calculations by Rodrigo Moreira, Dirección de Desarrollo Empresarial.

The Palm Oil price stabilization fund has its origin in Law 101 of 1993, which established the creation of price stabilization funds for agricultural, farming and fishery products, as special accounts designed to “ensure a fair income to producers, regulate national production and increase exports, by financing the stabilization of prices to producers.” The Palm Oil price stabilization fund was organized under these dispositions by Decree 2354 of 1996, as part of the Fund for Palm Promotion (Fondo de Fomento Palmero), which was created in 1994.

Notwithstanding all of the above, palm oil is also subject to preferential treatment through taxation. Figure 39 shows the effective income tax rate, calculated as described above, for the 4-digit ISIC Vegetable and Animal Oils and Fats, to which palm oil belongs.

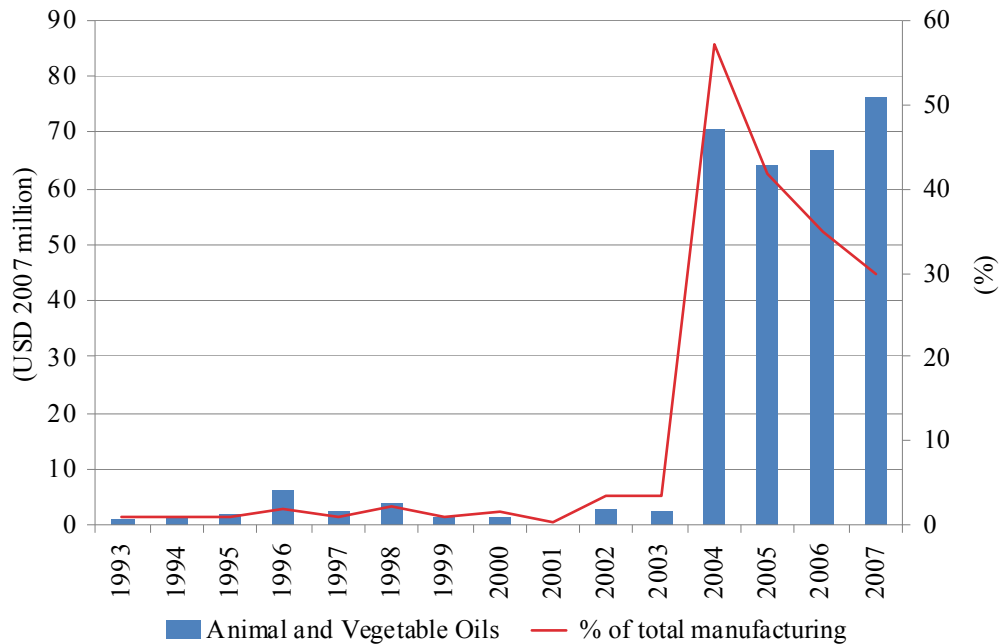
Figure 39. Effective Income Tax Rate



Source: Ministry of Finance (DIAN) and authors’ calculations.

Figure 40 shows that since 2000, income tax reductions and exemptions to the Vegetable and Animal Oils and Fats sector have amounted to more than US\$60 million (in 2007 terms) per year.

Figure 40. Income Tax Reductions and Exemptions



Source: Ministry of Finance (DIAN) and authors' calculations.

The drop in the effective income tax rate in 2004, as well as the magnitude of tax benefits since that year, probably results from the combination of the 40 percent reduction for investment in fixed assets mentioned above, the 10 percent reduction of the taxable database for new investments in reforestation, and the income tax exemption to new plantations during 2003-2013, which was intended to promote biodiesel production.

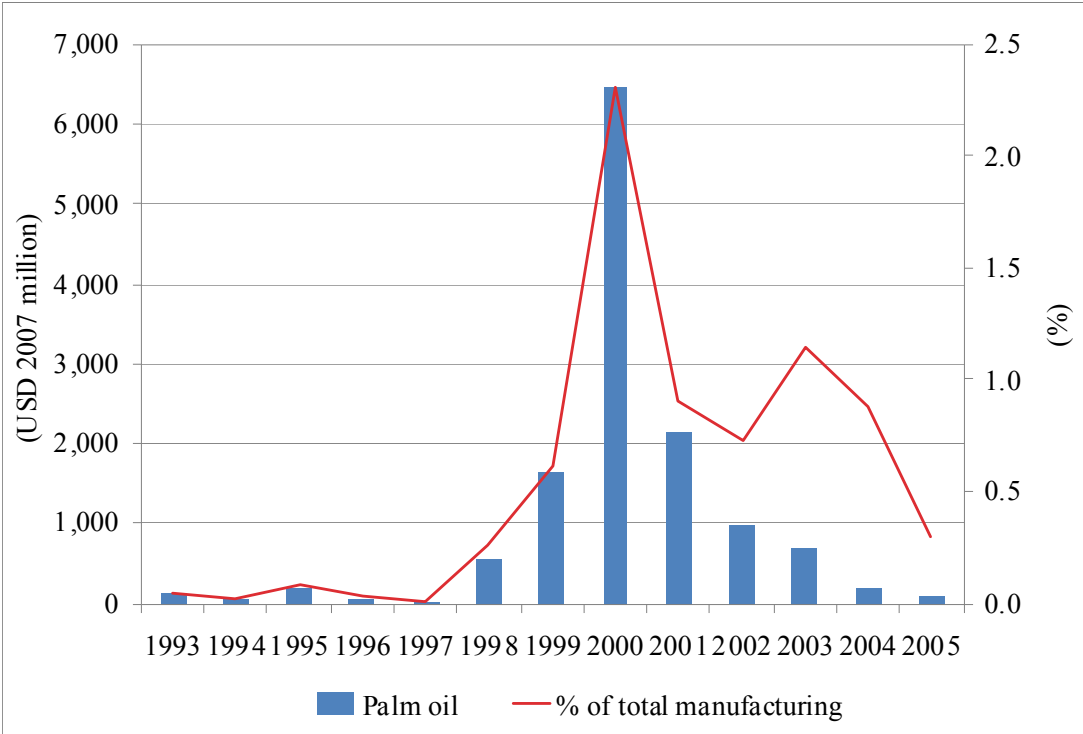
Incentives for biodiesel production also include VAT tax exemptions and the mandate that vehicles in cities with a population of more than 500,000 must use a mix of gasoline with 10 percent biofuels.

Other policies of more transversal character, but particularly relevant for the palm oil sector in light of biodiesel production, are tariff exemptions on inputs used in exports production through Plan Vallejo, tariff exemptions for machinery imports, and Free Trade Zone regulations for agroindustrial projects (including biodiesel). According to those regulations, investments of

US\$ 16.4 million or above, or those creating 500 jobs, will benefit from a 15 percent income tax rate (compared to the current nominal tax rate of 33 percent in 2008), regardless of whether they are physically located within the Free Trade Zone.

We do have evidence for use of CERTs by palm oil exporters (see Figure 41). These subsidies peaked for the sector in 2000, when they represented about 2.3 percent of all CERTs granted, and have been falling both in value and as a share of total CERTs since then. Table 22 presents a summary of the dynamics of both performance and the record available of policy use over time.

Figure 41. CERTs



Source: Ministry of Industry and Trade.

Table 22. Average Change Rates (%)

	1980-1990	1990-1995	1995-2000	2000-2006
Output	8.3	-1.4	-1.5	-
Employment	10.5	3.5	-4.5	-
Exports (in USD)	-	65.4	25.4	19.6
Number of plants	10.7	-3.3	-0.4	-
Plant size by output	-3.9	-2.7	2.1	-
Plant size by number of employees	-1.9	2.1	-1.0	-
Cropland area	-	7.9	2.4	9.9
Yield by acre	-	4.6	0.6	-1.6
Labor productivity	-2.0	-4.7	3.2	-
Effective income tax rate**	-	-3.4	5.4	-22.1
Tax reductions and exemptions in value**	-	18.4	-4.0	73.1
Tariff rate	8.9	-15.2	0.2	0.3
Effective tariff rate	7.1	-1.1	0.2	-
Finagro credit	-	-	8.1	23.5
CERTs	-	21.1	99.7	-57.1

Source: DANE, Ministry Agriculture, Ministry of Industry and Trade, DIAN, DNP and calculations by the authors. **For 4-digit ISIC code Animal and Vegetable Oils.

5.2.3 Conclusions

Palm Oil has been object of a number of targeted policies over the years. It seems subsequent governments have implicitly agreed that its development is of strategic importance for Colombia. Another possible explanation is a sector lobby's success in having its policy requests fulfilled.

Regretfully, the picture is one of pervasive protectionism and preferential treatments that are hard to justify on grounds of market failures. Interestingly, however, distortions introduced by policy interventions have resulted in significant sector expansion and successful export activity. Colombia is presently South America's largest palm oil producer and the world's fifth-largest palm oil exporter.

The story of export success has its origins in tariff protection and price stabilization, but for unexpected reasons: artificially high prices in the domestic market apparently created excess domestic supply and allowed entry into the world markets of producers that otherwise would have been unable to compete. Some who took advantage of this opportunity and made substantial investments affirm that they would be able to compete in international markets without government support.⁹¹ But many have survived both as producers and exporters as a result of government largesse without being efficient enough.

⁹¹ From interview with Carlos Antonio Espinosa, one of the largest palm oil producers in Colombia.

In order to explain why poorly designed PDPs have in this case had relative success in promoting growth and development, we venture the following hypothesis on the main restriction on investment: palm oil production is affected by substantial coordination failures due to both large-scale economies at processing plants, which require either huge investments in oil palm production (vertical integration) or coordination with a number of smaller oil palm plantations located within a particular distance range to operate at cost-efficient levels. This latter option involves contracts to guarantee recovery of huge long-term investments. Price differentials and other targeted PDPs, however, have facilitated investments in scale and allowed producers to largely bypass coordination needs. If this is the case, the correct question to pose is whether alternative policies could have achieved similar results at lower costs.

Can this be a case of successful infant industry protection? Even if this was the case in the beginning, the extremely generous tax incentives of recent years, when the industry was already mature and a consolidated exporter, cannot be justified on those grounds. Those incentives instead seem to be the consequence of a traditional rent-seeking process, taking advantage of the new priority given to rural public security to which employment in palm oil can allegedly contribute. Such incentives might have had some effect on increases in planted area and production, but not on employment, yields or exports, all of which actually fell in this period.

Finally, the appearance of biofuels is good news for the industry. This possibility, which was not foreseen when the governments initially decided to favor the palm oil industry, may well result in a better cost-benefit evaluation of the PDPs examined in the future.

5.3 *Software and Information Technologies (IT)*

5.3.1 *Sector Performance*

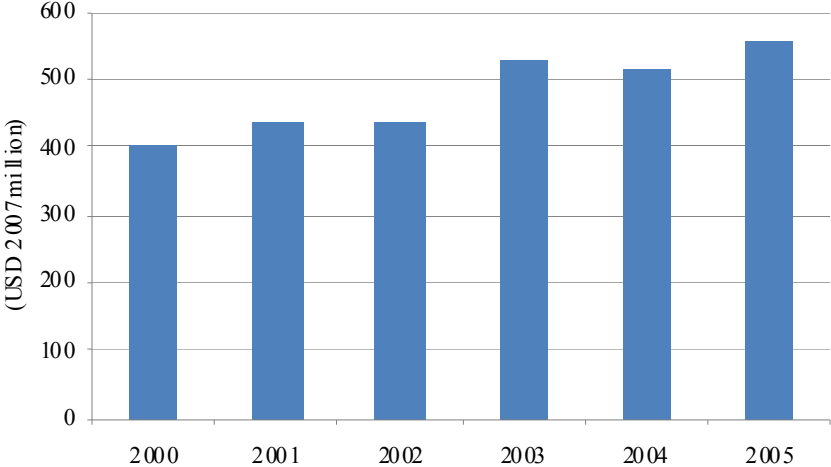
Despite having been identified almost a decade ago for its growth potential, its potential spillovers to other productive sectors, and, through them, for its key role as motor for aggregate productivity growth, the Colombian Software and IT sector remains relatively small and concentrated in the domestic market (only 10 percent of income comes from export activities⁹²).

⁹² Source: Software and IT Business Plan, 2008.

According to DANE’s Annual Services Survey (EAS for its acronym in Spanish),⁹³ however, between 2000 and 2005 (the last year for which there is data available), average output growth was 6.5 percent per year, a not insignificant rate. Also, there was substantial entry of new firms between 2002 and 2004, although this tendency apparently reversed in 2005, and, like output, employment followed a sustained growth trend during the period, unaffected by firm turnover (see Figure 42). In fact, employment growth was more spectacular than output growth: employment went from 10,585 employees to around 20,620 between 2000 and 2005, almost doubling, while output went from US\$ 403.7 million to US\$ 553.8 million for an overall increase of 37 percent over the same period. The result in terms of labor productivity performance is consequently not appealing.

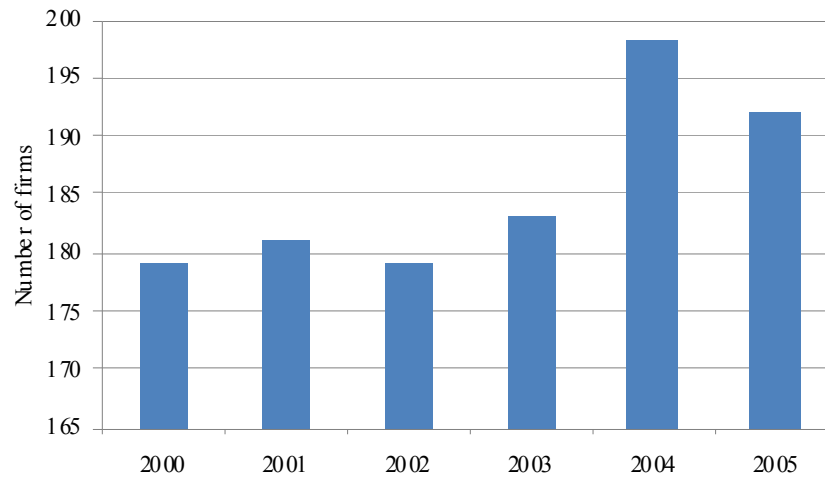
Falling labor productivity was accompanied by a trend toward larger firms in terms of employment. The trend of firm size in terms of output is also increasing but not as markedly.

Figure 42. Output, Employment and Number of Firms



⁹³ The DANE EAS is representative for the Software and IT sector until 2005. It samples all legally constituted firms with 20 or more employees, and it includes a probabilistic sample of the legally constituted smaller firms below that size.

Figure 42., continued



Source: EAS, DANE and authors' calculations.

Table 23 completes the sector’s picture by looking at performance by firm size measured by employment, in the most recent year for which data are available.⁹⁴ We find a sector composed of a small number of very large firms, of about 1,500 employees on average, that account for 21 percent of output and 48 percent of employment, a tier of medium to large firms of 143 employees on average, that account for 60 percent of output and 37 percent of employment, another tier of small to medium firms of 39 employees on average, that account for 12 percent of output and 11 percent of employment, and finally a larger group of smaller firms of 12 employees on average that account for only 7 percent of output and 4 percent of employment.

Table 23. Statistics by Firm Size (Number of Employees), 2005

	Output		Number of firms		Employment		Labor productivity USD	Average firm size by employment
	USD million	%	No.	%	No.	%		
Total	554	100	192	100	20,620	100	26,857	107
Less than 25	38	7	76	39	899	4	42,223	12
25 to 64	69	12	56	29	2,176	11	31,685	39
65 to 129	103	19	28	15	2,303	11	44,598	82
130 to 209	81	15	13	7	2,006	10	40,208	155
210 to 434	146	26	13	7	3,390	16	43,029	262
435 and above	118	21	6	3	9,846	48	11,950	1,521

Source: EAS, DANE and calculations by the authors.

5.3.2 Use of Policy Instruments

The Software and IT sector is newer than both manufacturing sectors reviewed previously, and for that reason government policies explicitly put in place to support it and promote its growth date only to the 2000s. We have identified government efforts on three fronts that should have by now shown effects on sector performance:

- Financial support programs: “design and development of new software products” has been since the early 2000s among the list of activities/products that may access funding through special support programs from at list three public institutions: FOMYPIME, Proexport (through Programa Nacional de Productividad y Competitividad, PNPC) and Colciencias.

⁹⁴ Size categories are determined by DANE.

- Income tax exemptions: in 2002 rents generated by the development of new software products were declared exempt of income tax for 10 years by Law 788 (Article 18).
- Competitiveness Agreement: the government signed a Competitiveness Agreement with the Software and IT sector in 2000, by which both parts committed themselves to actions in the following areas: recognition of the Software and IT industry; improvement of telecommunications infrastructure according to modern technologies; human resources development; legal framework development; adoption of international standards; strengthening of firm management; access to risk capital and strengthening of the sector's business association. A set of concrete actions was agreed upon, and there is a review record available from the Ministry of Industry and Trade stating that of a total of 26 commitments, 14 were complied with, nine were in progress at the time of the review, and three had not been addressed at all. Among the first group, probably the most relevant in terms of their potential impact are those associated with setting quality standards for academic programs in engineering (Decree 792 of 2001), facilitating certified training, and creating a quality certification program (through SENA and PNPC-Proexport⁹⁵). Among the second group, the most salient commitment involves intellectual property rights protection legislation and enforcement and piracy control. Finally, among the commitments not addressed at the time of the review was one from the Ministry of Industry and Trade to consolidate a risk capital supply for the sector.

Regrettably there is no updated record available of the firms who have directly benefited from the policy instruments that are not targeted sector-wide, but instead require self-selection by firms, such as certification programs.

More recently, in 2008 as mentioned above, the Software and IT sector was object of a jointly developed Business Plan with the government. This plan offers a diagnostic of the Software and IT sector and its potential vis-à-vis international markets, and, in the spirit of the

⁹⁵ At the time of the review 19 firms had been certified.

previous Competitiveness Agreement, it identifies a set of actions to facilitate the sector’s development. The list of restrictions and actions required to overcome them coincides in many cases with those included in the Competitiveness Agreement, revealing that even where commitments were considered fulfilled, there remains room for improvement. Table 24 summarizes market failures and identifies interventions to address them.⁹⁶

Table 24. Market Failures Identified and Actions Agreed Upon

Market Failure	Horizontal actions	Vertical actions
Poor of insufficient human capital	1. Development of inter-institutional programs 2. Design of short term bilingual programs 3. Strengthening of bilingual education in school 4. Design of financial instruments for education 5. Development of information systems for education monitoring 6. Diffusion programs in education institutions	
Regulatory inadequacy	7. Adjustment of regulations affecting the industry: customs, trade, exchange rate and accounting 8. Monitoring of telecommunication and information services regulation 9. Promotion of double taxation agreements with strategic countries 10. Design of public/private promotion funds 11. Design of financial instruments	1. Improvement of tax benefit for technological information content 2. Design of an offset program for public purchases
Insufficient product development and lacking production capacity	12. Development of business associations 13. Development of commercialization channels 14. Quality certification 15. Promotion of foreign investment 16. Design of a private investment fund, supported by Bancoldex 17. Promotion of private intervention in government programs	3. Strengthening of individual property rights 4. Support to public programs that promote productive transformation
Poor or insufficient infrastructure services	18. Design of technological parks 19. Access to telecommunication channels	

Source: Business Plan IT Services.

The terminology of the Software and IT Business Plan resembles that used in the call for papers that gives origin to this document. Policy actions are classified as horizontal or vertical, and associated with restrictions to investment classified as market failures. However, the category “regulatory inadequacy category” bundles actions that correspond to solving government failures (adjustment of existing regulations, monitoring of existing regulations) with

⁹⁶ Taken directly from the Software and IT Business Plan.

others that are more likely associated with other types of market failures (design of promotion funds, design of financial instruments), and other of the problem category labels could probably be revised to directly state the information or coordination externalities that the policy action agreed upon is expected to address.

Interestingly, out of 23 necessary interventions identified, 19 are presented in the Business Plan as horizontal policy requests, and only four are openly associated with specific needs of the Software and IT sector. Some would argue, however, that horizontal policy actions often turn out to be very sector specific in practice. This reflection should serve to somewhat moderate our conclusions with respect to the desirable degree of transversality of adequately designed PDPs.

5.3.3 Conclusions

The Software and IT sector's development is still recent, but it involves both tracks of policymaking described in Section 2. Identified in the early 2000s as a "strategic" sector, it has been the object of pervasive tax exemptions and of overlapping funding programs from various government institutions. The sector has at the same time been a pioneer in Competitiveness Agreements and Business Plans, the two most recent attempts at a new way of policymaking that intends to identify good policies through close interaction with the interested private parties.

Neither tax exemptions nor the proliferation of wide-ranging funding programs can be justified on grounds of the market (or government) failures identified in the 2008 Business Plan, nor on their impact on productivity performance. Insufficient human capital, quality standards and certification, and intellectual property rights protection adequately conceived and enforced are at the root of the problems preventing the Software and IT sector from reaching its full potential. These are the "activities" at the root of the coordination failures holding back this sector, and for this reason the requests for policies in these categories in Table 24 are well justified and would, if implemented, represent good policy. The request for "tax benefit improvements" is for the same reason suspect. It is conceptually related to "regulatory inadequacy" but does not really address an identified market failure, and comes from a sector that is already exempt from income tax on new product development.

While Business Plans indeed represent a progress in terms of traditional policymaking, in particular with regards to the process of eliciting the needs from the private sector, the reflections

in the previous paragraph suggest two concerns about the shape those plans can take in practice. The first has to do with the overlap of policies that come out of the joint exercise that gives origin to a Business Plan and targeted policies already in place. Business Plans should consolidate the full set of policies addressing the particular sector needs but not automatically “absorb” policies already in place that do not address the particular needs identified. Thus arise concerns regarding political interference in Business Plans and the government’s capacity to eliminate all other targeted policies once the Business Plan is in its final shape.

The second concern involves implementation enforcement. While it is true that Business Plans go some steps forward relative to Competitiveness Agreements, there is no guarantee that the interventions identified will take place in a given time frame. They also require the compliance of more than one government institution and some of the interventions require going through Congress. So there is a risk that Business Plans do not materialize or materialize in shapes different to those originally conceived. So Business Plans are originated through a process that is an example of good policy-making according to the more recent literature, and do have merit as potential route maps. But they cannot be automatically qualified as “good policy” without revising their contents, which may include “good” and “bad” policies, and it remains to see how they translate in actual policies; so the jury is still out.

6 Conclusions

In Colombia, use of sector-specific or region-specific PDPs as well as of more horizontal incentive policies has been extensive, despite the fiction maintained until recently of only moderate government intervention. With few exceptions, PDPs have rarely been explicitly associated with the need to address market failures; this is particularly true for vertical PDPs targeting sectors or particular groups of firms. More commonly, PDPs have been connected to economic reactivation or “competitiveness,” a term that until recently dominated policymaking jargon to justify a mixed set of policies bound together only up by loose rationality. There has always been also a set of PDPs that, in the spirit of “second best” policies, address government failures deemed to be more difficult to correct by first best interventions.

However, the shift from protectionism towards a more open economy in the early 1990s has led to a change in productive development policies in Colombia. Up to the 1980s, traditional “industrial policies,” based on selective trade protectionism, tax incentives and subsidized credit

for “strategic industries,” prevailed. There were no open consultations with the private sector and opaque rent-seeking influences were generalized. Since then, however, Colombia has made progress in structuring a well-designed institutional setting for PDPs that is sufficiently embedded within a network of linkages with private groups to elicit information about the constraints and opportunities facing the private sector that require government intervention. This has been a process of trial and error that started with liberalization in the early 1990s and that, while still lacking in many dimensions, is starting to reflect in some interesting courses of policy action. In this setting, at least in theory, the State’s role is seen more as that of a coordinator and specific public goods provider rather than of a provider of subsidies and protection. There are some quite promising developments, in particular the creation of a Private Competitiveness Council that has been accepted by the government as its main counterpart in structuring the “competitiveness and productivity” system of participative PDP policy formulation and the joint elaboration of “business plans” for selected sectors, through a rigorous process that mixes technical scanning with some competition for limited government resources.

However, several concerns remain. The first relates to the “sustainability” of this process, as since the early 1990s every new government (including the transition from Uribe’s first to second administration) has substantially changed the institutional structure, process and content of policy. The presence of the Private Competitiveness Council might help in increasing continuity. A second concern involves implementation. Though some ministries and Government agencies (those led by more technocratic ministers and directors) are clearly committed to the more modern PDP process and contents, especially to selected “business sector plans,” some key ministries and agencies (particularly in agriculture and transport infrastructure) are not bound by this process and continue to carry on a more traditional clientelistic and rent-seeking policy agenda. More generally, the new institutional setting for PDP design coexists with the traditional clientelistic track of policymaking in which economic groups and other private actors obtain rents (tax cuts, public subsidies, etc.) by engaging in transactions with the executive branch and Congress. As a consequence, the overall set of PDPs in place still lacks coherence and is often not guided by a sound open process of organized policy consultation with the private sector. In fact, clientelistic practices and rent seeking, and as a consequence tax incentives and subsidies that cannot be justified by market failures, have actually increased in intensity in recent years, alongside the institutionalization of a parallel modern participatory PDP process. Why this has

happened—and how and whether these parallel tracks will eventually converge—remains an open question for fruitful future research.

These tensions are apparent in the more detailed analysis that we conducted on both specific horizontal and vertical interventions. With respect to the former category of horizontal interventions, we found that, although there has been significant progress in designing export promotion policies to address actual market failures (linked to the process of opening of new export lines and markets, as in Proexport services) or government failures (the duty drawback system), and to reduce subsidies in export credits (through Bancoldex), there have been some important reversals in other aspects. In particular, export subsidies (CERTs) that had been previously eliminated, were temporarily restored for some vocal export sectors, allegedly to “compensate” for currency appreciation pressures. Worst, in reforming Export Zones to conform to WTO agreements, a new regime of highly discretionary FTZ advantages for large investments was created and is producing major distortions among similar firms. We also found that policies to support access to finance for microfirms and SMEs have evolved in a way that relates better to potential market failures, while SME credit subsidies have been significantly reduced. On the other hand, training policies remain dominated by a virtual monopoly of a public institute (SENA) that is generously financed by an earmarked tax on wages yet lacks the ability to adjust to changing needs determined by the fast pace of technological progress and a more complex economy. Moreover, SENA has successfully resisted several attempts to institute a more competitive system of training services.

In the second category of vertical interventions we analyzed the cases of two mature sectors that have been the object of multiple policies over the years (Textiles and Apparel, and Palm Oil) and of a younger sector that has been more recently identified as a strategic sector for economic growth. In the first two cases we found it is hard to relate benefits in a discernible way to market failures, or to productivity increases. In fact, government support seems to have allowed the survival of productive units that would have otherwise exited the industry, hurting aggregate productivity. In the case of Palm Oil, where coordination failures pose a significant restriction on growth, government support appears to have been useful to bypass these failures by facilitating production at larger scales. However it did so at a much higher cost than would have represented to address the source of the coordination failures directly. Finally, in the case of Software the more modern Business Plan approach to develop a competitive sector coexists with

tax incentives and other traditional interventions. The government faces the challenge of transitioning to a unified PDP system that is all-encompassing: Business Plans must only absorb the policies in place that are justified by the restrictions on productive investment identified by the private actors, and not automatically “absorb” policies already in place that do not address the particular needs identified. Thus there remains concern regarding political interference in Business Plans and the government’s ability to eliminate all other targeted policies once a Business Plan is in its final form.

We close with two final reflections. The first is that, while vertical policies targeting the origin of coordination failures affecting particular sectors can be justified on a case-by-case basis, Colombia must continue its efforts to provide a basic set of horizontal public goods that are productivity enhancing to all private actors: improved basic education, adequate infrastructure services, further red tape reduction, advances in quality control and certification, and a working competition policy. These policy areas have a central place among policy requests by the private sector, and their provision has the potential of multiplying the impact on productivity of all other policy efforts.

The second and final remark is that efforts towards “good” policymaking must be complemented with an additional effort to reach firms and sectors that, while not traditionally participants in consultation processes, may contribute significantly to aggregate productivity once the information and/or coordination failures facing them are solved. So far, efforts to bring the private sector closer to the policymaking process have been to a large extent restricted to larger actors.

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Appendix 1

1. Domestic Agenda for Productivity and Competitiveness

The National Planning Department keeps a case-by-case record of the policy requests formulated during the Domestic Agenda discussion tables in 2004, and of the government's subsequent responses reactions to those requests. This record was made available to the research team for the purpose of this study.

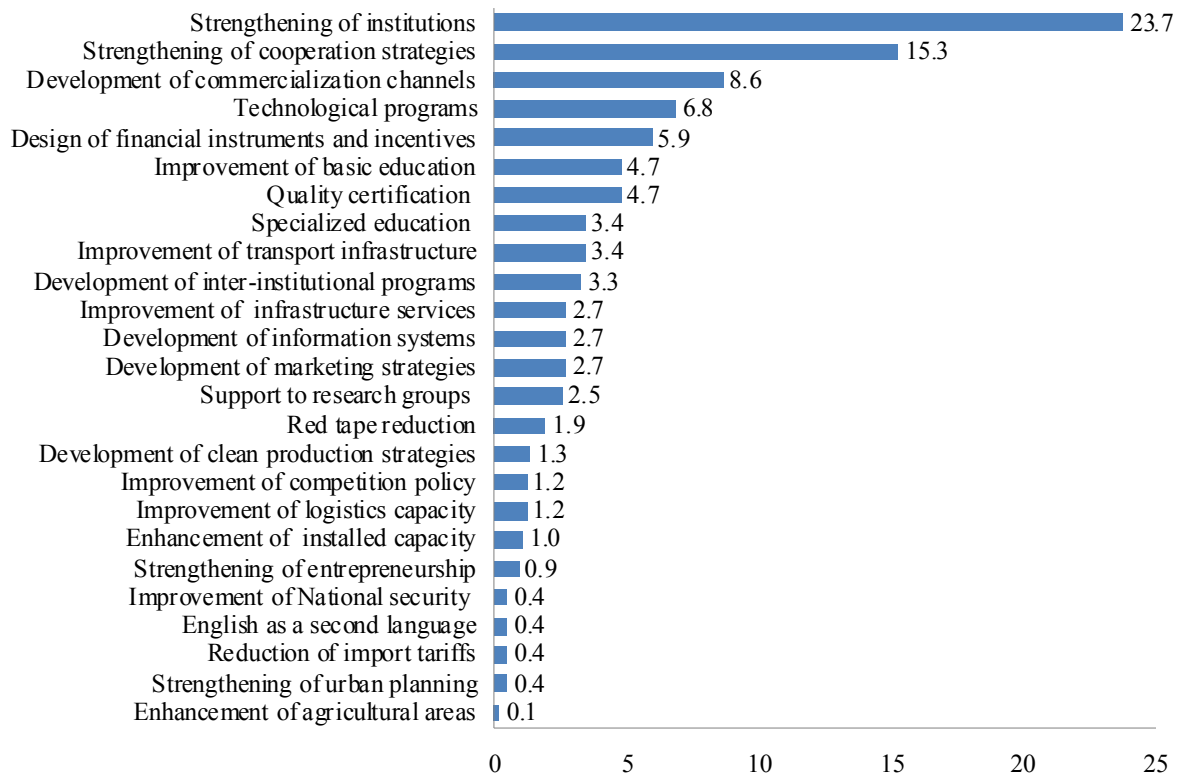
In order to use this information, it was necessary to convert it into a workable database by assigning codes to text entries. This included coding sectors and regions and also classifying both policy requests and justifications offered in broad categories.

The database consists of 4,079 sector-region entries comprising 25 ISIC 3-digit sectors and 31 departments (geopolitical regions akin to states or provinces).

Figure A1 1. Perceived Problems

Market Failure	Horizontal actions	Vertical actions
Poor of insufficient human capital	1. Development of inter-institutional programs 2. Design of short term bilingual programs 3. Strengthening of bilingual education in school 4. Design of financial instruments for education 5. Development of information systems for education monitoring 6. Diffusion programs in education institutions	
Regulatory inadequacy	7. Ajustment of regulations affecting the industry: customs, trade, exchange rate and accounting 8. Monitoring of telecommunication and information services regulation 9. Promotion of double taxation agreements with strategic countries 10. Design of public/private promotion funds 11. Design of financial instruments	1. Improvement of tax benefit for technological information content 2. Design of an offset program for public purchases
Insufficient product development and lacking production capacity	12. Development of business associations 13. Development of commercialization channels 14. Quality certification 15. Promotion of foreign investment 16. Design of a private investment fund, supported by Bancoldex 17. Promotion of private intervention in government programs	3. Stregthening of individual property rights 4. Support to public programs that promote productive transformation
Poor or insufficient infrastructure services	18. Design of technological parks 19. Access to telecommunication channels	

Figure A1 2. Policies Requested



Source: DNP Domestic Agenda database and calculations from the author.

2. Fedesarrollo’s Entrepreneurial Opinion Survey (EOS)

Fedesarrollo’s Entrepreneurial Opinion Survey (EOS) is a monthly survey representative for the manufacturing sector at the national level. It is sampled to provide robust results for two types of segmentations: (1) by size (large versus medium and small firms) and (2) by international exposure (exporters versus non-exporters).

In addition to the basic questionnaire, the October 2008 EOS included a thematic module on Productive Development Policies (PDPs) designed for the purpose of this study, to which 202 manufacturing firms responded.

The assessment of perceived problems obtained by means of the PDP module presents a slightly different picture about the most frequent concerns of the private sector than the records from the Domestic Agenda. Three factors may explain the differences: i) the EOS is representative of the manufacturing sector while the Domestic Agenda was

wider in terms of sector reach but targeted only those sectors interested in participating in the policymaking process; ii) the EOS reaches entrepreneurs and not sector representatives; and iii) the EOS reaches entrepreneurs that may not participate at all in policymaking, while interaction within the Domestic Agenda by definition occurred with those who participate.

**Table A2 1. Use of Policy Instruments
(percentage of total firms responding each period)***

Policy instrument	Before 1990	1990 to 2000	2000 to present
Financial instruments			
IFI credit lines	45	44	12
Bancoldex credit lines	48	54	64
Finagro, Caja Agraria o Banco Agrario credit lines	35	33	29
Collateral obtained through Fondo de Garant'as	25	26	23
Export insurance or other insurance with government support	31	30	30
Exchange-rate hedging with government support	25	23	26
Export promotion instruments			
Cat or Cert.	46	54	45
Free export zones	31	36	35
Plan Vallejo	48	53	52
Market information	34	38	43
Fairs and events	41	43	48
Contact with potential clients	37	36	41
ATPA, ATPDEA or other special tariff agreement	31	35	36
Protection from foreign competition			
Tariff protection	59	59	54
Other form of protection	1	1	2
Technological Innovation			
Colciencias funds for technological innovation	42	46	40
Support from Corpoica or Fondos Parafiscales	31	29	26
Incubator program or similar	25	23	20
Tax incentives and/or subsidies			
Income tax exemption or deduction	58	59	60
VAT tax exemption or reduction	51	48	54
Direct subsidy	9	10	9
Training			
Basic training through SENA	69	68	62
Specific training through SENA	57	56	52
Training through other government owned institute	28	26	23
Training through private institute	37	34	31
Training within the firm	48	45	46
Other			
Quality certification program	55	60	62
Phitosanitary certification program	28	29	25
Red tape reduction program	43	43	41

* Percentages were calculated from among firms responding for the period in question, regardless of whether they did or did not provide a response for other periods.

Table A2 2. Use of Policy Instruments by Size, 2000 to Present

Policy instrument	Large	Medium	Small
Financial instruments			
IFI credit lines	12	13	11
Bancoldex credit lines	59	80	50
Finagro, Caja Agraria o Banco Agrario credit lines	30	35	11
Collateral obtained through Fondo de Garant'as	15	33	50
Export insurance or other insurance with government support	32	35	11
Exchange-rate hedging with government support	22	37	22
Export promotion instruments			
Cat or Cert.	55	37	17
Free export zones	40	35	11
Plan Vallejo	67	35	17
Market information	41	52	33
Fairs and events	47	52	44
Contact with potential clients	42	48	22
ATPA, ATPDEA or other special tariff agreement	37	39	28
Protection from foreign competition			
Tariff protection	54	65	33
Other form of protection	2	0	6
Technological Innovation			
Colciencias funds for technological innovation	40	46	28
Support from Corpoica or Fondos Parafiscales	29	24	17
Incubator program or similar	21	22	11
Tax incentives and/or subsidies			
Income tax exemption or deduction	62	70	33
VAT tax exemption or reduction	55	65	22
Direct subsidy	9	15	0
Training			
Basic training through SENA	62	67	50
Specific training through SENA	54	59	33
Training through other government owned institute	24	22	17
Training through private institute	38	20	28
Training within the firm	51	37	44
Other			
Quality certification program	64	59	61
Phitosanitary certification program	29	22	17
Red tape reduction program	41	48	28

**Table A2 3. Percentage of Firms Rating Instrument as Inadequate, 2000 to Present
(as percentage of firms responding)**

Policy instrument	Total	Large	Medium	Small
Financial instruments				
IFI credit lines	36	38	38	33
Bancoldex credit lines	50	42	58	43
Finagro, Caja Agraria o Banco Agrario credit lines	49	50	50	33
Collateral obtained through Fondo de Garantías	34	40	33	20
Export insurance or other insurance with government support	31	32	29	33
Exchange-rate hedging with government support	42	35	50	50
Export promotion instruments				
Cat or Cert.	65	68	70	43
Free export zones	36	35	40	0
Plan Vallejo	32	27	36	33
Market information	40	29	48	50
Fairs and events	42	43	41	40
Contact with potential clients	38	31	43	50
ATPA, ATPDEA or other special tariff agreement	37	31	44	33
Protection from foreign competition				
Tariff protection	50	58	44	33
Other form of protection	60	50	0	100
Technological Innovation				
Colciencias funds for technological innovation	40	36	42	45
Support from Corpoica or Fondos Parafiscales	36	33	40	43
Incubator program or similar	35	33	38	33
Tax incentives and/or subsidies				
Income tax exemption or deduction	40	33	49	33
VAT tax exemption or reduction	45	39	51	43
Direct subsidy	48	-	64	0
Training				
Basic training through SENA	34	33	35	36
Specific training through SENA	33	36	23	45
Training through other government owned institute	37	36	42	33
Training through private institute	30	30	33	25
Training within the firm	34	36	30	40
Other				
Quality certification program	23	21	18	43
Phitosanitary certification program	28	28	25	33
Red tape reduction program	29	27	29	40

**Table A2 4. Percentage of Firms Rating Instrument as Inadequate
(as a percentage of firms reporting use of policy instruments in all periods)**

Policy instrument	Before 1990	1990 to 2000	2000 to present
Financial instruments			
IFI credit lines	17	16	38
Bancoldex credit lines	24	11	16
Finagro, Caja Agraria o Banco Agrario credit lines	27	27	39
Collateral obtained through Fondo de Garantías	43	36	29
Export insurance or other insurance with government support	69	48	38
Exchange-rate hedging with government support	65	61	54
Export promotion instruments			
Cat or Cert.	16	21	56
Free export zones	41	32	23
Plan Vallejo	24	10	9
Market information	53	32	25
Fairs and events	53	36	31
Contact with potential clients	68	47	38
ATPA, ATPDEA or other special tariff agreement	45	26	22
Protection from foreign competition			
Tariff protection	25	33	41
Other form of protection	100	100	100
Technological Innovation			
Colciencias funds for technological innovation	64	50	49
Support from Corpoica or Fondos Parafiscales	76	69	62
Incubator program or similar	70	61	52
Tax incentives and/or subsidies			
Income tax exemption or deduction	48	44	31
VAT tax exemption or reduction	49	42	41
Direct subsidy	75	0	75
Training			
Basic training through SENA	38	24	24
Specific training through SENA	45	28	27
Training through other government owned institute	58	54	54
Training through private institute	29	27	18
Training within the firm	27	16	15
Other			
Quality certification program	47	22	14
Phitosanitary certification program	54	31	27
Red tape reduction program	70	49	31

**Table A2 5. Most Desired Policies
(percentage of total firms responding)**

	Total	Large	Medium	Small
Tax reduction	17	19	19	13
Lower costs of financing	12	7	13	25
Improvement of infrastructure services	11	12	13	
Reduction of payroll taxes	11	7	16	25
Tax rule stability	6	10		
Control to smugglers	6	7		13
Tariff reduction (inputs)	6	4	6	13
General support	6	3	13	
Protection from imports competition	5	7		
Exchange rate stability	5	3	9	
Reduction of labor market rigidities	2	3		
Better integration agreements	2	3		
Red tape reduction	2	1	3	
Technological innovation and R&D	2	1	3	
Training	2		3	13
Tax incentives for investment	2	3		
Policy transparency	2	3		
Access to financing	1		3	
Fairs	1	1		
Incentives for foreign investment	1	1		
National security	1	1		

**Table A2 6. Participation in PDP Policymaking
(percentage of total firms in each category)**

	Total		Large		Medium		Small	
	Yes 30	No 70	Yes 38	No 63	Yes 16	No 84	Yes 29	No 71
Participation in the formulation of policies								
If affirmative:								
Participated before 1991	11		18		3		0	
Participated in the 90's	14		20		3		9	
Has participated in the present decade	27		33		15		26	
Participation has been:								
Direct, through firm manager or special office	13		15		6		20	
Direct, through a professional lobbyist	2		3		0		0	
Through a business association	15		18		10		8	
Other	1		2		0		0	
Participation in the context of:								
Negotiations of Competitiveness Agreements	4		5		3		0	
Discussion of Domestic Agenda	5		7		0		10	
Formulation of National Development Plan	1		2		0		0	
Communal Councils	2		2		0		5	
Business association initiatives	16		20		11		14	
Other	2		2		1		0	
Participation mechanisms are:								
Adequate because the government provides sufficient spaces for participation	3		6		1		0	
Only for firms represented by a business association	11		13		7		9	
Only for large firms	6		6		3		13	
Only for groups with political power in the regions	6		7		3		4	
Not working due to lack of mechanisms to implement the policies formulated.	4		5		1		4	

**Table A2 7. Participation in PDP Policymaking
(percentage of participating firms in each category)**

	Total	Large	Medium	Small
If affirmative:				
Participated before 1991				
Permanently	35	29	100	-
Sporadically	65	71	0	-
Participated in the 90's				
Permanently	36	33	100	-
Sporadically	64	67	0	-
Has participated in the present decade				
Permanently	39	46	22	17
Sporadically	61	54	78	83
Participation has been:				
Direct, through firm manager or special office	42	40	36	71
Direct, through a professional lobbyist	5	7	0	0
Through a business association	49	48	64	29
Other	4	5	0	0
Participation in the context of:				
Negotiations of Competitiveness Agreements	12	12	18	0
Discussion of Domestic Agenda	17	18	0	33
Formulation of National Development Plan	4	5	0	0
Communal Councils	6	6	0	17
Business association initiatives	55	52	73	50
Other	6	6	9	0
Participation mechanisms are:				
Adequate because the government provides sufficient spaces for participation	10	15	5	0
Only for firms represented by a business association	37	36	43	31
Only for large firms	22	17	21	44
Only for groups with political power in the regions	19	19	21	13
Not working due to lack of mechanisms to implement the policies formulated.	12	14	10	13

**Table A2 8. Participation in PDP Policymaking by Channel
(% over total replies of participating firms in each category)**

	Total	Large	Medium	Small
One or more congressmen	60	55	78	67
The President	18	19	11	17
A Minister or Vice-minister	11	10	11	17
Other public officials	7	10	0	0
No response	5	7	0	0

**Table A2 9. Participation in PDP Policymaking by Channel
(percentage of total replies of participating firms reaching each channel)**

	Large	Medium	Small	Total
One or more congressmen	68	21	12	100
The President	80	10	10	100
A Minister or Vice-minister	67	17	17	100
Other public officials	100	0	0	100

**Table A2 10. Participation in PDP Policymaking by Channel
(percentage of total firms in each category)**

	Total	Large	Medium	Small
One or more congressmen	18	21	12	19
The President	5	7	2	5
A Minister or Vice-minister	3	4	2	5
Other public officials	2	4	0	0
No response	2	3	0	0

Table A2 11. Interaction Effectiveness by Channel (percentage)

	Successful: a similar policy was implemented	Moderately succesful: a similar policy has some times been implemented	Moderately succesful: the requested policy was not implemented but a compensatory policy was implemented in its place	Not successful: the policy request was denied
One or more congressmen	25	25	25	25
The President	39	50	11	0
A Minister or Vice-minister	20	29	34	17
Other public officials	23	15	15	46
Other channel	38	25	25	13