

**Matching Grant Schemes for Enterprise Upgrading:**  
**A Comparative Analysis**

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## Matching Grant Schemes for Enterprise Upgrading: A Comparative Analysis

Programs to assist smaller enterprises gained prominence in the 1970s, as the focus of industrial policy on development of large-scale basic industries increasingly came into question. The result was a series of programs to support financial and non-financial assistance to small enterprises (SEs). A large number of technical assistance programs were created, generally as a supplement to directed credits – with Government generally serving as executing agent. The emphasis on improving the *supply* of services to be provided by public sector agencies predominated through the 1980s. Not surprisingly, the impact of these programs may be characterized as poor. A study of World Bank lending for SEs found that these Government-executed schemes were mostly “slow to get off the ground, costly and ineffective”.<sup>1</sup> By the 1990s, a new market-friendly approach emerged which emphasized the temporary subsidy of privately-provided, demand-driven services. This paper examines two of these new-wave schemes aimed at provision of non-financial business advisory services.

Given economies of scale and scope observed in many industries, why should public policy be concerned with development of SEs? Coase’s early work on the theory of the firm posited that the optimal size of a firm was determined by cost of intra-firm versus external market transactions.<sup>2</sup> The differential in transactions costs may be viewed as resulting from a complex set of factors, including the need for specialized equipment, trained personnel, access to finance, and political influence. Economies of scale regarding the latter two factors may be particularly large in developing countries - hence the evidence of success of diversified conglomerates observed at early developmental stage of many countries.<sup>3</sup>

However, over-reliance on large enterprises (LEs) may reduce flexibility in an economy (particularly in labor markets) and result in reduced competition/oligopolistic behavior.<sup>4</sup> Furthermore, analysis suggests that SEs are not inherently less efficient than LEs, given good management, technology, and trained workers.<sup>5</sup>

The argument for intervention to assist small enterprises has traditionally focused either on the social or growth benefits arguably associated with SE development. This paper will not explore these arguments in detail. The view taken here is that SEs play an important role in both social and economic development; however, intervention should be justified in economic terms with a view toward sustainability of service provision and facilitation of private market activity.

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<sup>1</sup> Leila M. Webster, Randall Riopelle, and Anne-Marie Chidzero, “World Bank Lending for Small Enterprises 1989-1993,” World Bank Technical Paper No. 311, World Bank (1996): 33.

<sup>2</sup> R.H. Coase, “The Nature of the Firm,” *Economica* (Nov 1937): 386-405.

<sup>3</sup> “When Eight Arms are Better than One,” *Economist* (September 12, 1998): 67-68.

<sup>4</sup> Empirical evidence from Japan indicates a mix of dynamic SEs and LEs facing significant market competition can prove most effective in fostering development of highly productive and competitive industry. The contrasting experience of the success of the Japanese auto industry, with a high degree of competition and linkages with SEs, versus the oligopolistic and highly concentrated chemicals industry is indicative. Evidence also from Korea and Taiwan - over-dominance of LEs distorts capital allocation, reduces domestic competition, and impedes flexibility of labor markets.

<sup>5</sup> Hong W. Tan and Geeta Batra, “Technical Efficiency of SMEs: Comparative Evidence from Developing Countries,” Private Sector Development Department Occasional Paper No. 19, World Bank (1995).

A further caveat regarding SE support programs: evidence suggests that proactive intervention is not likely to work unless the basic environment for private sector development is sound. Intervention does not reduce the need for reform of labor, financial, or goods markets; to the contrary, programs require a sound business environment to succeed.<sup>6</sup>

This paper will compare two innovative approaches toward upgrading of firm technological and administrative capability which emerged in the early 1990s, in Chile and Mauritius. Both schemes utilize private sector agents to deliver services, focus on creating markets via stimulation of demand, and emphasize program sustainability and cost-recovery. However, the models differ in subtle yet important ways, with implications for design of programs elsewhere.

A description of the two countries' approaches forms the next section of the paper, to be followed with a discussion of relative strengths/weaknesses and policy lessons of each approach in terms of cost effectiveness, transparency, and sustainability. For each program, the discussion will address briefly the country context and present the overall design characteristics. Governance issues and the role of executing agent will be explored, including a discussion of the selection process and the agent compensation and incentive system. The interaction of the program with other governmental and private SE support initiatives. Next, the paper will discuss the incentives, characteristics, management, and upgrading of consultants offering services to firms under the programs. Finally, the implications for market creation and sustainability will be addressed, along with the agenda for monitoring and evaluation.

### **The Chilean approach**

Chile's program of market-oriented reforms have been widely recognized for their role in creating sustained economic growth and poverty reduction. The importance of the favorable macroeconomic and legal/regulatory environment supportive to private sector activity in Chile cannot be overemphasized. The relatively small size of the informal economy (an estimated 30% of GDP), compared with other Latin American economies (40-60% of GDP), serves as an indicator of the relative compatibility of the legal/regulatory environment with private entrepreneurship.<sup>7</sup> The other side of the government's program, a pragmatic approach toward pro-active policy intervention, has received less comment but has arguably played an important role in creating high rates of sustained growth.

The current Chilean approach toward SE support includes a wide array of programs in areas such as technology development, export promotion, and worker training. These programs represent an evolution from earlier centralized, supply-driven approaches executed by the public sector. Beginning in the late 1980s, the development agency CORFO<sup>8</sup> aimed to reorient SE support services under a World Bank-financed project implemented by SERCOTEC<sup>9</sup>. The matching grant scheme

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<sup>6</sup> Donald B. Keesing and Andrew Singer, "Development Assistance Gone Wrong: Why Support Services have Failed to Expand Exports," WPS 543, World Bank (1990).

<sup>7</sup> Victor E. Tokman and Emilio Klein, eds., *Regulation and the Informal Economy: Microenterprises in Chile, Ecuador, and Jamaica*, Lynne Rienner Publishers (1996).

<sup>8</sup> *Corporación de Fomento de la Producción* (Corporation for Production Promotion).

<sup>9</sup> *Servicio de Cooperación Técnica* (Technical Cooperation Service), subsidiary of CORFO.

design was intended to stimulate demand through subsidy of private consulting services. Despite the innovations in design, however, public sector implementation of the scheme caused many of the draw-backs of the earlier supply-driven approaches to reappear in practice (e.g., effective lack of cost-sharing, lack of firm input to consultant selection, and lack of market orientation).<sup>10</sup>

The use of private agents for program implementation began in 1993, with the subcontracting of a portion of SERCOTEC activities (US\$500,000) to the *Asociación de Exportadores Manufactureros* (ASEXMA)<sup>11</sup>. ASEXMA was encharged with the responsibility of implementing both single-firm projects (FAT)<sup>12</sup> and multi-firm (PROFO)<sup>13</sup> projects. The role of CORFO became one of regulator, with a focus on financial management, monitoring and evaluation. With an explicit aim toward sustainability of service provision, ASEXMA and participating firms were intended to receive a declining subsidy over the medium-term. In 1994, a group of business associations formed CEPRI<sup>14</sup>, which has become the largest agent for the FAT program and an important facilitator of PROFOs. A variety of other agents have been approved on a sectoral and regional basis.

#### General description

The FAT and PROFO programs support a wide range of SE upgrading activities, including in the areas of financial management, marketing, quality, design, production systems, strategic planning, and environmental management. The FAT extends a relatively small level of support for short-term consulting projects for one or more firms; PROFO supports longer-term multifirm projects. While the typical FAT project is one to two months in duration, the PROFO receives 1-3 years of support and is eligible for up to 2 additional years.

Table 1

#### **Comparison of Basic Characteristics of Chile and Mauritius Schemes**

	Chile		Mauritius
	FAT	PROFO	
Firm Eligibility	US\$80,000 - US\$3.4 million in sales	US\$80,000 - US\$3.4 million in sales	All firms with at least 51% percent private equity
Subsidy cap	US\$2,500 per project	US\$100,000 per project <i>per annum</i> , or	US\$100,000 per firm over life of program

<sup>10</sup> Enrique Roman, “*Criterios de Auto-Sustentabilidad de un Sistema de Provisión de Servicios no Financieros a la Pequeña Empresa: La Experiencia del Centro de Productividad Industrial, CEPRP*”, Inter-American Development Bank (1997).

<sup>11</sup> Association of Manufacturing Exporters.

<sup>12</sup> *Fondo de Asistencia Técnica*, or Technical Assistance Fund.

<sup>13</sup> *Proyecto de Fomento*, or Promotion Project.

<sup>14</sup> *Centro de Productividad Integral*, or Center for Integral Productivity, was formed by ASEXMA along with seven other business associations and thirteen individual large enterprises.

		US\$13,600 per firm <i>p.a.</i>	
Cost sharing	If firm annual sales less than US\$1.7 million, subsidy declines from 85% to 50% over course of six projects.  If annual sales US\$1.7 - 3.4 million, subsidy declines from 70% to 30% over six projects.	Subsidy decreases from max. 70% in first year to max. 50% in third year.	50/50

Support under FAT is primarily used for single-firm consulting projects. A small enterprise submits to the agent a request for support of a specific consultant activity; support is then awarded on a first-come-first-served basis. "Collective FAT" are also available - and are often used in support of a PROFO project. The low level of subsidy under FAT (cap of US\$2,500 per project) is intended to support only the initial stage of enterprise use of external consultancy services: firms are expected to continue purchasing external advisory services on the open market.

PROFO aims to build firm competitiveness through collective action. A PROFO project consists of five or more firms with a specific shared objective, most commonly in the area of strategic planning, product development, and export marketing. The PROFO then hires a project manager to coordinate the joint activities such as studies, consultancies, commercial missions abroad, or training. Project proposals are facilitated by the agent and reviewed ex-ante by CORFO. Under rules introduced in mid-1998, the structure of the PROFO was modified to enable support for a one-year preparatory stage, a change widely viewed as a positive development on the part of program participants.<sup>15</sup>

The programs are open to a broad range of SEs, with the exception of microenterprises. Firms with annual sales between US\$80,000 and US\$3.4 million in sales are eligible under both FAT and PROFO. Although open to a wide range of firms, the level of subsidy and activities eligible for support program favor participation of smaller firms.

Budgetary support for the two programs has grown from US\$0.5 million in 1993<sup>16</sup> to US\$25.4 million in 1998, although delays in release of budget in 1998 were reported due to fiscal tightening driven by Chile's macroeconomic situation.

### Role of agents

<sup>15</sup> Under previous rules, no support for project preparation was available. This arrangement limited the program's ability to reach beyond groups of firms with some level of pre-existing relationship. In addition, the cost of the preparation stage was reportedly commonly disguised in the cost of implementation for approved projects.

<sup>16</sup> Figure for 1993 includes only the activities of private agent. SERCOTEC began implementation of FAT and PROFO in 1992, with a budget of US\$1.6 million. SERCOTEC share of implementation has continued to decline, but the public agency continues to serve as administer program in sectors and regions not covered by private agents.

The central innovation of the Chilean approach is the use of private sector agents for implementation of the FAT and PROFO programs. The first agent, ASEXMA, was originally entrusted with administering both programs. However, the strengths of the business association were more applicable to PROFO, where the ability to promote associativity was critical. The skills involved in managing a large-scale technical consultancy program were viewed as better undertaken by a separate professional body - hence the creation of CEPRI by a group of associations and enterprises.

Under the three-tiered delivery mechanism, the role of the public sector moved from direct provision of services to one of policy formulation, monitoring, evaluation, financial management, sharing of best practices, and provision of (temporary) subsidy. The second-tier consisted of the private or quasi-private agents<sup>17</sup> entrusted with either (i) brokering of initial use of external consultant services by SEs in the case of FAT or (ii) cultivating group projects between firms with shared interest (PROFO). The third tier consisted of the private consultants which executed the firm-level advisory projects.

#### Mechanics of agent system

Under a developmental framework, CORFO aimed to create a network of private executing agents, operating with autonomy combined with accountability. An additional challenge was the creation of a decentralized regional network covering the 4,000 km. length of the country. With a lack of proven, experienced agents, CORFO selected the most promising applicants and worked in cooperation to upgrade their capabilities. Successful applicants were generally based around business associations, some in alliance with technical universities and local government. A sectoral approach was taken, with a view toward promoting collaboration and joint sectoral activities rather than maximizing competition between agents. Institutional capacity was developed through close interaction with CORFO staff - little formal training was undertaken to upgrade skills and operations of agents.

As the capacity of the agents developed, responsibility for program execution was expanded incrementally on a case-by-case basis. For example, a FAT agent would be required to submit each project to CORFO for approval on an ex-ante basis during the initial months of operation. As confidence in the agent increased, the ex-ante reviews diminished and were replaced by an ex-post review on a sample basis. If CORFO determined *ex post* that any project approved by the agent were not eligible for support under official guidelines, the agent would not receive financing for that project. As an added safeguard, firms were required to pay their contribution to the agent prior to initiation of the project. Upon completion, the agent would then compensate the consultant for the work done.

The financial management system played a key role in assuring independent operation of FAT agents, with tight monitoring and safeguards to promote accountability. Following the signing of an operating agreement and deposit of a bond by the agent, funds were advanced to the agent by CORFO for the projected activity over the next quarter or semester (depending on agent track record). When a consulting project was completed, the firm submitted the report to the agent -

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<sup>17</sup> Including the semi-autonomous, publicly-owned SERCOTEC.

indicating whether the work has been done satisfactorily. If so, the firm and agent reimbursed the consultant based on the schedule for cost sharing (Table 1).

This arrangement has worked well to date as a result of the high degree of autonomy and accountability of the private agent. CORFO has worked to minimize the element of discretionality, an inherent risk under a system with a combined goal of decentralized operation and capacity-building of private agents.

FAT agents were given an administration fee of 15% of the cost of the overall project (including private and public contributions). The level of compensation of agents was under review by CORFO to ensure that economies of scale in program operation were reflected in compensation structure. In any case, the current FAT program has achieved dramatic cost savings in comparison with the previous public sector-executed model, under which operating costs averaged five times the grant subsidy received by the firm.

PROFO has retained a greater degree of centralization, with full ex-ante review of projects by CORFO management. This arrangement was considered necessary due to the larger size and longer duration of the subsidy. The result is predictable: participants have complained of bureaucracy and delays during approval, as well as the large time commitment required of the PROFO manager to comply with CORFO requirements. A certain degree of bureaucracy is inevitable in any publicly-funded program; CORFO is exploring options for greater decentralization with appropriate safeguards.

Two strengths of the Chilean approach - decentralization and development of institutional capacity of local private sector agents - also are subject to risks of politicization and lack of transparency.

Regarding decentralization, each agent is managed on a regional basis, offering potential benefits of increased local ownership and tailoring to local needs. Each agent must negotiate its contracts on a regional basis, whether or not the agent has a nationwide presence. Discretionality at the regional level become evident in local control of consultant registries and non-conformity of agent contracts across regions. While a regional approach offers benefits, safeguards against local discretionality are also advisable.

The second paradoxical “strength” of the Chilean approach is found in the developmental approach toward agent selection. Use of local private sector groups for execution of SE upgrading programs offers large potential benefits in terms of (i) ability to convene collective action projects and promote inter-firm associativity; and (ii) creation of local capacity for brokering of firm upgrading services to outlast period of subsidized operation.

This “strength” also carries a high degree of risk. Under the FAT and PROFO programs, the developmental approach was responsible for creating a decentralized, national network of agents. In comparison to a purely fee-for-service arrangement (described in Mauritius section of report) this developmental approach has a significant drawback: increased discretionality of government administrators which may undermine the autonomy and accountability of agents. Interviews with participants in the Chilean scheme give evidence of politicization and discretionality by public administrators.

In addition, the Chilean approach has cultivated agents on a regional and sectoral basis, with limited competition between agents. While an informal segmentation of the market may provide benefits in recruiting agents (which often have an origin in sectoral business associations), an overly-rigid system acts to reduce or eliminate competition - with a corresponding impact on cost effectiveness and quality of service to client firms. *Ex post* evaluations of the FAT and PROFO programs suggest a high degree of variation between agents in terms of cost effectiveness and quality of service.<sup>18</sup>

This study does not attempt to assess the overall political economy of the Chilean programs, however, interviews suggest that participating business associations and public agencies may form alliances which serve to restrict competition between agents. At this stage in development, the Chilean system could benefit from a more transparent and competitive process for selection and contracting of agents. Clients could benefit greatly in terms of cost and quality of service from open competition between agents. The role of local business associations in program implementation can be highly beneficial; however, their direct involvement in execution of government programs has the potential to generate suboptimal incentive regimes.

#### Consultants: Incentives, Characteristics, and Management

Consultants serve the most basic function in the FAT and PROFO programs - they provide the direct assistance to client firms. The aim of the programs is to provide high quality consultants to address the real needs of enterprises. Several potential tools are available to maximize the benefits provided.

The first tool is the registry of consultants, currently maintained by CORFO at the regional level. Any experienced consultant, local or international, may request registry; however, national consultants are used almost exclusively. To avoid conflicts of interest, agents are not allowed input regarding CORFO's decision to list a consultant in the registry. In order to ensure consistent standards across regions, and increase the pool of consultants available to firms, CORFO is launching a national, on-line registry.

Other initiatives to maximize the quality of consultant services are under consideration or piloting by CORFO. One technique used in other countries is an initial diagnostic of firm needs according to an approved methodology. CORFO is exploring the options for piloting various diagnostic models. In addition, consultant training programs have been undertaken in selected regions. The focus has been on techniques for managing consulting projects. These two activities could serve to improve the quality, consistency, and appropriateness of services offered.

#### Interaction with other SE Support Initiatives

The FAT and PROFO programs were the first SE support initiatives in Chile to move toward decentralized implementation. Other government programs still operate on centralized basis, including the successful export promotion agency Prochile and training schemes operated by the Labor Ministry. This divergence makes it difficult for an agent to provide an integrated service

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<sup>18</sup> José Miguel Benavente, Julio Cáceres, Gustavo Crespi, and Roberto Muñoz, *Impacto del Instrumento FAT en la Pequeña y Mediana Empresa*, and José Miguel Benavente, Gustavo Crespi, Jorge Katz, and Julio Cáceres, *Impacto del Instrumento PROFO en la Pequeña y Mediana Empresa*, Departamento de Economía, Universidad de Chile (1997).

covering a full range of firm upgrading needs. In particular, a high degree of complementarity between FAT-type advisory services and multi-firm training courses has been observed in other countries due to the “technology-skill complementarity”.<sup>19</sup> Chile’s range of SE support programs would benefit from a review to assess options for flexible, decentralized implementation.

### Economic Impact and Sustainability

The economic rationale for the FAT and PROFO programs rests on two pillars: direct economic impact on the productivity, sales revenue, and employment of firms; and impact on the market for business advisory services. As with many other SE support programs, monitoring and evaluation have focused on the first goal, which has more immediate tangible, political benefits. The second goal, with greater benefits in the longer term, has received little analysis.

Table 2

### **Impact Assessment of FAT Scheme**

Growth in:	Total Sample		CEPRI	
	Firms reporting	Attributed to FAT	Firms reporting	Attributed to FAT
Sales	65	30	73	34
Production volume	62	25	66	28
Employment	39	21	35	24
Exports	16	5	28	12
Salaries	66	11	72	11

Evaluations of the FAT and PROFO programs undertaken in 1997 by the University of Chile were based on a survey of participating firms.<sup>20</sup> Partial results of the survey of FAT participants are presented in Table 2. Firms reported broad gains in a variety of output measures, with a reasonable portion of the benefits attributed to the FAT program. The corresponding figures for the agent CEPRI are presented as well to exclude projects undertaken by quasi-public agents. Although data on the percent increase in output were not collected, one may infer that the program had a significant positive impact on firm growth.

For PROFO, positive returns in economic and financial (fiscal) terms were observed. The economic cost-benefit (CB) ratio for PROFO was estimated at 2.4, and the fiscal CB ratio at 3.2. Broad benefits in firm upgrading were identified for participating firms versus a control group. No studies regarding the development of the market for consulting services in Chile were available during preparation of this report. However, anecdotal evidence suggests some success in creating sustained private market for SE advisory services.

<sup>19</sup> Hong Tan and Geeta Batra, “Enterprise Training in Developing Countries: Incidence, Productivity Effects, and Policy Implications,” Private Sector Development Department, World Bank (1995).

<sup>20</sup> Benavente, Cáceres, Crespi, and Muñoz, 1997 and Crespi, Katz, and Cáceres, 1997.

This paper does not attempt a detailed methodological discussion of techniques for evaluation of SE support programs; however, the issue of data collection is particularly salient. Agents were not incentivized to collect extensive data regarding the impact of the programs. Available data was provided by participating firms, which were obliged to complete a client satisfaction survey in order for execution of payment of consultant. This method of data collection introduced an important potential source of bias: firms had to submit data in order for consultants to be paid. Agents reported that CORFO was more concerned with compliance under auditing and accounting arrangements to insure proper use of funds than with impact assessment. The weakness of available data for impact assessment is partially attributable to this focus on *financial* management. Data collection is a severe challenge under any circumstances due to confidentiality concerns and logistical difficulties: the Mauritius experience suggests that even a sustained effort by agents operating under a strong incentive regime will have difficulty in collection of proprietary firm-level data. Explicit incentives and improved mechanisms for agents to collect data are needed under the FAT and PROFO programs.

### **The Mauritius Technology Diffusion Scheme**

Mauritius is a small, open economy which experienced high rates of growth during the 1980s based on exports of garments and sugar. When growth rates began to decline in the early 1990s, the Government recognized the need to upgrade the technological capacity of firms and move into higher value-added products to support continuing increases in real wages. The Technology Diffusion Scheme (TDS) was developed in 1993-1994 to address this problem.

The TDS was conceived as a temporary intervention aimed to demonstrate to firms the value of external advisory services and thus facilitate creation of a private market. Executed by a private agent, the program extended matching support to single- and multi-firm projects for upgrading of enterprise capacity.

#### General description

The TDS supported a similar range of services to the Chilean schemes, including product quality, design, process technology and productivity enhancement - with the proviso that the project contribute to Mauritius' competitive position in international markets. Any firm with majority private-sector ownership was eligible to participate, regardless of size; however, due to the nature of services supported the main clients were in the manufacturing industry and related support services.

Simplicity in operation was a central principle in design of the scheme. A uniform 50/50 ratio in determining subsidy levels was applied across all projects and sizes of firms. Flexibility in operation was enhanced by the wide range of projects supported. Although most projects were small, with the average less than US\$10,000, TDS was able to support much larger projects of up to US\$100,000 in subsidy.<sup>21</sup> Both single- and multi-firm projects were supported.

Unlike the Chilean schemes, large firms were not explicitly prohibited from participation. This flexibility in design allowed a natural progression of firms to participate in the scheme. During the early stage of operation, larger firms within the SE spectrum were attracted to the scheme as a result of existing consultancy relationships and greater propensity to use external advisory services.

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<sup>21</sup> Maximum grant support per firm was limited to US\$100,000 over the life of the TDS program.

As the results of these projects were diffused, smaller firms were attracted to the scheme through a demonstration effect and the status associated with participation of larger firms. Over the life of the scheme, average grant size declined from US\$15,100 to US\$9,800.

A second rationale for inclusion of large firms was discovered *ex post*: the program evaluation indicates no correlation of firm size with program benefits (i.e., increase in sales or exports). This finding implies that the information asymmetry in the market for consulting services was true for larger firms in Mauritius as well as smaller competitors. Another benefit of large firm participation was the potential tie-in with backward linkage programs. Finally, for large firms, the transactions costs associated with participation in the scheme were likely to outweigh benefits of receiving a subsidy - further argument for simplification of program rules to permit their participation.

Total grant funding of US\$2.1 million, supported under a World Bank loan, was committed during the program's four-year implementation period (1994-1998). After four years of operation, the program had supported 225 projects in 153 firms, with 47 firms undertaking more than one project. Including firm contributions, the cost of services provided under the TDS reached US\$5.1 million. In addition, the World Bank financed US\$450,000 in operational costs, representing 8.8% of cost of services provided to firms. This cost compares favorably with the Chilean FAT program, with a comparable agent cost ratio of 15%.

#### Role of agent

The TDS shared the key innovation of the Chilean approach - autonomous operation by a private agent under contract from the Government. The private agent was entrusted with promoting the program with potential clients; assisting clients with planning firm-level activities; facilitating contact between firms and suitable consultants; helping clients complete grant applications; advising client firms how to maximize use of consultancy; and administering approvals and disbursement of funds.

The agent was selected through competitive international bidding to execute the full four-year program, subject to an annual performance review. Selection criteria for the agent focused on technical capacity to execute a firm-upgrading scheme. Local institutional development criteria did not enter into the selection process.

Instead of a proactive, developmental role for Government *vis à vis* the private agent, as in Chile, a non-discretionary fee-for-service relationship with explicit performance criteria was established. A foreign provider was preferred for several reasons. The temporary nature of the planned intervention was not viewed as requiring creation of local institutional capacity. The program aimed to create a sustained private market for external consultancy services, not a permanent broker. In addition, the use of a foreign agent was viewed as improving the Government's control over the agent relationship and reducing the potential for collusion between the agent and participating consultants.

The result of the explicitly contractual and non-discretionary relationship between Government and agent resulted in a greater degree of transparency, and arguably, in accountability of the private agent. Although the Chilean approach represented a tremendous advance over previous public sector executed schemes, the role of the state in Mauritius was streamlined one step further,

allowing the public sector to focus on policy formulation, monitoring, and evaluation.

#### Mechanics of agent system

A Supervision Committee, consisting of three public sector representatives and three private business associations, was entrusted with oversight of the program by the Ministry of Industry and Industrial Technology (MIIT).<sup>22</sup> In addition to general supervision of the agent, the Supervision Committee approved all grant applications over US\$50,000 and was intended to facilitate any government approvals required in the course of the firm-level projects. Full responsibility for administration was delegated to the privately-contracted agent from the beginning of program implementation. Individual projects were approved on an ex-post basis by the Supervision Committee; however, the sole condition for the Committee to decline support for a project approved by the agent was in the case of demonstrated fraud.

With a small staff (generalist/administrator, broadly-experienced technician, and secretary), the agent managed the approval and disbursement of grants while providing assistance to applicants in selection of consultants, promoting the program, and collecting data for monitoring and evaluation purposes. The agent was responsible for confirming the completion of each project and delivery of final product to the client firm. Upon this confirmation, the Ministry of Finance issued the grant check directly to the participating firm. The participation of the Finance Ministry in supervision of the scheme helped to ensure that reimbursement was rapid - averaging 10-15 days.

As indicated above, the fee paid to the agent was equivalent to 8.8% of total cost of firm-level projects. Due to the small physical size of Mauritius, no geographical decentralization of the scheme was necessary.

The key strength of the Mauritius TDS was the high degree of transparency and low level of discretionality in management. The agent approved projects on a first-come-first-served basis according to conformance with eligibility criteria and was responsible for all project activities, including administration of funds. Except for very large projects, all ex-ante review was undertaken by the agent and could be countervailed by the Government only in the case of fraud. No criteria for development of the agent's internal administrative capacity were included in the decision set of the program overseers: the agent was selected on the basis of existing technical expertise. The resulting degree of discretionality on the part of the agent, Supervision Committee, and MIIT was very low.

Approval of projects by the agent, a key feature in ensuring the accountability and responsiveness of the Mauritius scheme, was reportedly planned to be modified under the second phase scheme currently being prepared by the Mauritius government. Increased *ex ante* review by the Supervision Committee would likely result in reduced effectiveness of the program through increased politicization, bureaucratization, and delays. Any changes in program design which could undermine the technical independence and accountability of the private agent would be highly damaging to the future of the scheme.

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<sup>22</sup> Supervision Committee membership included representatives of MIIT, Ministry of Finance, Prime Minister's office, and three business associations.

### Consultants: Incentives, Characteristics, and Management

As under the Chilean programs, the TDS consultants form the core of the scheme through direct provision of services to client firms. The agent was encharged with registration of consultants on basis technical grounds. Of the 204 consultants registered by the agent, 52% actually provided services under the scheme. Although the agent offered assistance in selection of consultants, 70% of participating firms selected a consultant of their own accord. The agent's role in registry and selection of consultants as well as approval of projects represents a serious potential conflict of interest. In the case of Mauritius, the potential conflict of interest on part of agent was reduced by the use of a technically-qualified foreign contractor with a strong interest maintaining its international reputation. Nevertheless, this design element deserves careful consideration to ensure proper alignment of incentives to agent and participating consultants and firms.

The consultants were a mix of local and international specialists - with 57% of projects undertaken by Mauritius-based experts. On a cost basis, however, foreign consultants absorbed 53% of all grants, primarily as a result of increased travel costs.

The Mauritius scheme had the explicit aim of facilitating creation of a market for external business advisory services. However, the scheme was not linked to any local training programs to upgrade consultant capability. Although technical training was clearly outside the scope of the scheme, linkages with a program to develop skills in project management (how to be a good consultant) could have assisted in local capacity-building.

A second missing feature in the Mauritius scheme is the requirement of an initial diagnostic of firm needs. However, the indications of positive economic returns from participation in the scheme (see below) may undermine the argument for a mandatory diagnostic stage.

### Interaction with other SE Support Initiatives

The scheme was designed as a free-standing program, with a dedicated agent for implementation. The design was intended, however, to promote interaction with activities of private business associations. A key benefit in Chile of using local business associations for program implementation was their power to promote the schemes and to convene groups of firms for joint activities. In Mauritius, this benefit was obtained through inclusion of three leading business associations on the Supervision Committee. The agent also hired local staff with strong reputation and ties to business groups, which served to build confidence in the scheme.

The Export Processing Zone Development Authority (EPZDA) was instrumental in promoting the TDS. Over half of all projects (53%) were undertaken by firms located in the Export Processing Zone. The group schemes, in particular, required extensive recruitment and preparation which were beyond the capabilities of the two-person TDS contractor. During the life of the scheme, thirteen group projects involving 37 firms were undertaken.

The agent also developed a relationship with the national development bank and private commercial banks which facilitated financing of the firm contribution under the program, as well as follow-on investment projects based on business plans.

Overall, the high degree of operational independence of the TDS did not appear to impede

cooperation with existing SE support programs in Mauritius. The incentives of the private agent favored joint activities with existing organizations, due to the participation of business groups on the Supervision Committee as well as purely commercial considerations. The small promotional budget of TDS could be effectively multiplied through reliance on business associations ongoing activities. Conversely, the TDS was clearly beneficial to business associations and their members, allowing them to focus on strengths in facilitating joint activity without the burden of direct operational responsibility for a government program.

As in Chile, the program was not linked with a scheme to upgrade capacity of human resources at the firm level. As stated above, evidence from other countries indicates that linkage of a technology upgrading scheme to a similar program for human resources upgrading may produce synergies for both programs.

#### Economic Impact and Sustainability

The TDS aimed to enhance the international competitiveness of private firms through stimulating the market for technology support services. The intervention was intended to “offset the learning costs in the initial acquisition of technology services and to promote technology diffusion through... demonstration effects”.<sup>23</sup> Despite this stated objective, monitoring and evaluation of the TDS focused on direct benefits (increased sales and exports) accruing to firms as a result of participation. No systematic analysis of the market for consulting services was undertaken to directly assess the progress toward the scheme’s stated goal of stimulating the growth of this market.

The TDS design supported a reasonably strong measurement of the scheme’s direct impact on firm competitiveness. The letter of agreement signed with participating firms required them to disclose incremental sales and export revenues as well as indicators associated with implementation of business plans (e.g., ISO 9000 certification, increased productivity, and new product launch); importantly, the private agent was required to follow up with firms to ensure this information was properly collected. Reportedly with substantial effort, the agent was able to collect monitoring information on 148 projects involving 110 firms.<sup>24</sup> The remaining firms were unwilling to submit information following completion and disbursement of projects.

The average reported increase in sales for participating firms is 49%, with exports growing by 53% - far in excess of expectations at project launch. The total net sales increase for the 145 projects with relevant data was US\$186 million; exports grew by a reported US\$106 million. Export performance for participating firms versus non-participants in sectors for which data was available was strongly positive (Graph 1). Other indicators of project success were also strongly positive, with high growth in sales and exports associated with various types of projects.

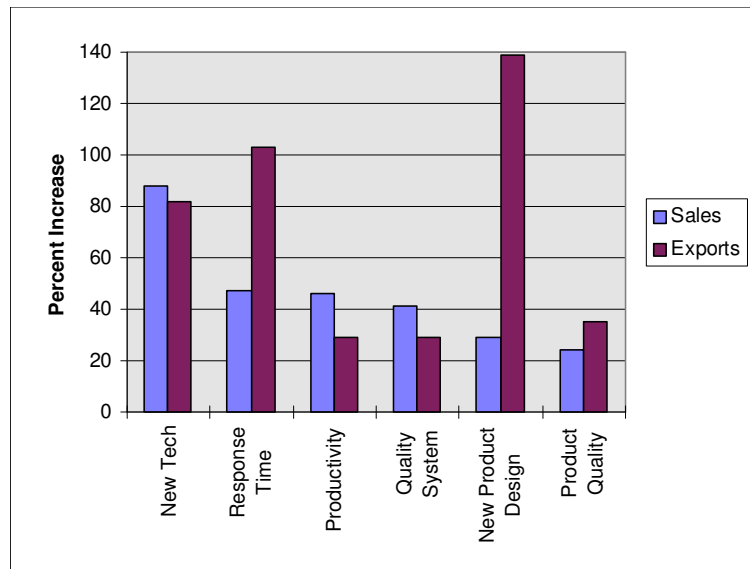
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<sup>23</sup> *Technology Diffusion Scheme: Manual of Policies and Operating Procedures*, Mauritius Ministry of Industry and Industrial Technology, 1995.

<sup>24</sup> 66% response rate of the 225 projects undertaken. See *Mauritius Technology Diffusion Scheme, Final Report*, Segal Quince Wicksteed Limited, November 1998.

Graph 1

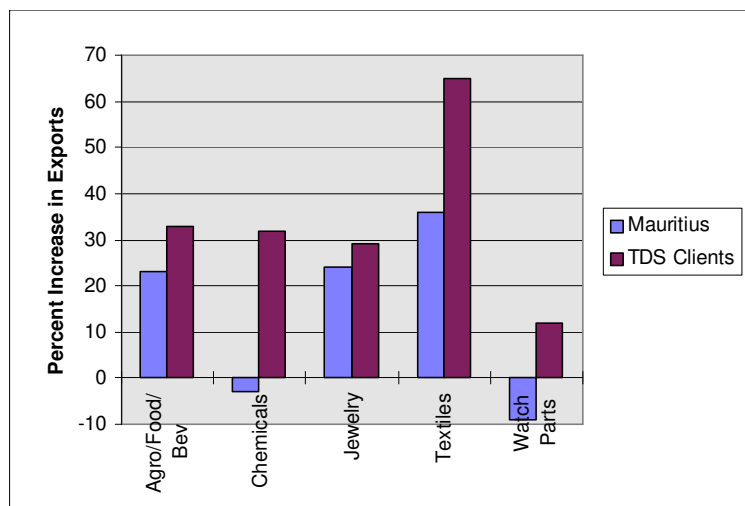
## TDS Impact on Sales and Exports by Type of Project



The impact evaluation of the TDS is based on relatively robust data, with a large sample size and appropriate incentives for data collection by the implementing agent. However, analysis of the TDS suffered from weaknesses common to studies of programs to upgrade firm capacity, including (i) selection bias, whereby relatively successful firms are the first to apply for program participation; and (ii) collinearity with other factors influencing overall growth in productivity, sales and exports. However, the large magnitude of reported benefits, sectoral analysis (Graph 2), and evidence from interviews<sup>25</sup>, suggests that the impact was indeed positive. Larger firms tended to respond that they would have postponed or downsized the project had TDS support not been available. Smaller enterprises typically responded that participation in the scheme was “a turning point” in development of the firm. The TDS apparently had a significant and positive impact on participating enterprises.

<sup>25</sup> “An Evaluation of the Mauritius Technology Diffusion Scheme,” New World Ventures, September 1997.

Graph 2

**Export Performance of TDS Clients Vs Non-Participants**

Regarding the impact on the market for external advisory services, interviews with consultants indicated that the market for advisory services was poorly-developed in Mauritius prior to the scheme. One indicator of program success was a reported decrease in consultant fees, reflecting increased competition and overall activity in the market. In addition, the use of local consultants increased during the life of the scheme from 40% during the first year to 60% in the final year. Anecdotal evidence suggests that markets for quality systems and ISO 9000-related advisory services benefited greatly from the scheme. However, no broad quantitative analysis of program impact on the consultant market was undertaken.

**Summary and Conclusions**

The two programs discussed in this paper share a basic philosophy of demand-driven, private sector implementation with an aim to facilitate creation of sustained markets for service provision. The selection process and contractual relationship between government and the agent differ between Chile and Mauritius, resulting in potential lessons for design of programs in other countries.

The Chile approach uses a mix of quasi-public, private and quasi-private agents to implement the FAT and PROFO programs, with a view toward enhancing the implementation capacity of participating agents. This approach combines a semi-competitive initial selection process with a cultivation of agent capability.

The Mauritius approach uses a private, international contractor to administer the program on a fully autonomous basis with a low degree of discretionality on the part of both government and agent.

Both programs offer evidence of a positive net impact on economic growth and

exports, although evaluation is hampered by methodological and practical difficulties. One lesson is that provisions for monitoring and evaluation need to be clearly defined up front, including the incentive structure and methods for collection of data.

The programs also offer evidence that private sector operation of BDS support programs, with maximum autonomy and accountability on the implementing agents, offer significant benefits in cost effectiveness versus previous state-executed regimes. In addition to reduced cost, the private operators offer increased flexibility, improved responsiveness, and a more entrepreneurial attitude in meeting client needs than public sector providers.

Financial management of these BDS schemes was undertaken on an *ex post* basis with the aim of improving incentives for cost recovery and appropriate use of funds. Although these control mechanisms (i) are not foolproof in screening out fraud; and (ii) may discourage smaller firms which lack access to financing for program activities, the overall impact is judged to be positive on overall accountability of the schemes.

The developmental approach used in Chile, which aims to build a network of agents for long-term provision of services for upgrading of enterprises, offers several potential advantages in terms of building local capacity. However, any initial benefits from the developmental approach are diminished as the system matures. After the initial, developmental stage, the system would benefit from full and open competition between implementing agents.

The Mauritius scheme addresses the issue of capacity building differently. Although the TDS was executed by an international consulting firm hired under a competitive bidding process, local business development agencies benefited from participation as service providers under the scheme. Acting as consultants under the scheme, local business groups extended their outreach and ability to meet the needs of member firms. In this way, the TDS encouraged the long-term creation of infrastructure for SE services. Business groups, in turn, contributed to the TDS their strength in marketing the scheme to member firms - and in identification of firm needs. In this way, the benefits of local participation (capacity building and enterprise mobilization) were obtained while avoiding the political pitfalls of direct execution by these same entities.

Competition between agents, or the threat thereof in the case of small economies such as Mauritius, plays an important role in containing costs and improving service quality. The Chilean scheme could benefit from increased competition between agents.

The competitive process for selection of agents in Mauritius offers the additional benefit of transparency and non-discretionality on the part of both government and agent. The government role is then focussed on policy formulation, monitoring, and evaluation - minimizing the risk of politicization of program operation.

Inclusion of large firms in the program offers several potential benefits. First, firms which are large for a given economy may still be small relative to international competitors - and benefit as much as smaller firms from participation. In addition, participation of large firms offers a demonstration effect for smaller firms and may also bring them into "vertical" or "backward linkage" projects.

Incentives for oversight of consultant participation in the program is critical to maximize

quality of services while minimizing moral hazard for participants. Clear, simple criteria for registry of consultants should focus on provision of information to enable firms to select for themselves. Schemes in which agents or the government become involved with discretionary schemes for consultant registry should be avoided.

Finally, the need for strengthened analysis of the economic impact of matching grant schemes emerges clearly from a study of both countries. Even with explicit incentives for the agent to collect information from scheme participants in the case of Mauritius, data gathering proved difficult. No systematic assessment of impact on the market for business advisory services was undertaken. Increased analysis of this type will be necessary to determine the appropriate period of intervention, as well as exploring potential improvements in program design. Although indicators to monitor program success were incorporated, no assessment of the appropriate criteria for *ending* support were articulated. Evidence from the Chile and Mauritius schemes give strong indications of positive economic impact; however, a more serious approach toward impact assessment is needed to better design the interventions of the future.