Chapter 3

The productivity challenge: Enhancing competition, entrepreneurship and innovation

Main recommendations

Chile’s productivity has virtually stagnated over the past decade, thus impairing the convergence towards higher living standards. Key policy measures to boost productivity growth include: enhancing competition through legal and regulatory action; removing regulatory barriers to entrepreneurship; and strengthening innovation in firms.

Specifically:

- Ensure the National Economic Prosecutor receives sufficient resources. Deter cartel participation by linking the maximum fine to revenues on the market involved in the conspiracy. Make price fixing a criminal offence.
- Revise the text of the Competition Act to clarify the Competition Tribunal’s jurisdiction to review mergers, the stages of merger analysis and the substantive standards applied.
- Reduce entry barriers in retail and business services to discipline incumbent firms.
- Continue reducing “red tape” for start-ups to strengthen competition and encourage entrepreneurial ideas.
- Reform the bankruptcy law to encourage entrepreneurial risk taking in non-traditional sectors.
- Maintain strong commitment to support technological and other forms of innovation and continue efforts to strengthen links between universities and firms.
- Complement supply-side measures to foster broadband Internet access by demand-side measures.
- Pursue the cluster initiative as a market-friendly, bottom-up approach to give innovation policy the necessary degree of selectivity, but strengthen the evaluation of relevant measures and establish sunset clauses for public support.
- Establish by law the institutional structure for innovation policy to ensure continuity of the long-term innovation strategy.
Over the past two decades Chile has grown faster than most other OECD countries. Between 1986 and 2007, gross domestic product (GDP) per capita grew on average 4.3% per year, compared to 2.2% in the OECD area. Income per capita (in purchasing power parity) relative to the United States has increased from 18% in 1986 to 31% in 2007, and Chile has overtaken all other Latin American countries except Mexico. While part of the exceptionally high growth in the second half of the 1980s was due to the cyclical recovery from the banking crisis in the early 1980s, sounder macroeconomic policies also played an important role. The implementation and later consolidation of ambitious reforms to liberalise foreign trade, improve the functioning of labour, product and financial markets, and restructure the pension system further contributed to strong economic performance.

Nevertheless, the income gap with many advanced OECD economies remains substantial and growth has slowed since the end of the 1990s. Chile’s GDP per capita is around one-third the level in advanced OECD countries. Following the Asian economic crisis, growth of per capita GDP slowed to less than half the pace of growth during the “golden age”, 1986-97.

Uneven productivity developments explain the major part of the recent slowdown in growth. According to a growth decomposition (OECD, 2010a), the contribution of capital formation to GDP growth over the past decade has been similar to that of the 1986–97 period, but both labour input and total factor productivity (TFP) growth have slowed. The slowdown in labour input growth accounts for around one-third of the slowdown in GDP growth over the past decade, and the apparent stagnation of TFP accounts for the remaining two thirds (OECD, 2010a). Over the past decade, the rate of TFP growth in Chile has been below the OECD average (Table 3.1).

In Chile the macroeconomic policy framework, in particular the structural fiscal rule with an independent inflation-targeting central bank and a flexible exchange-rate regime, has gone a long way towards achieving macroeconomic stability. However, macroeconomic stability alone cannot achieve strong productivity growth. One important precondition is vigorous competition in product markets, which gives firms incentives to reduce inefficiencies in organisation and management and to innovate. The regulatory framework for entrepreneurship, including entry and exit regulations, can facilitate the reallocation of production from inefficient to more efficient firms. An appropriate innovation policy framework can also help increase productivity growth by overcoming market failures that influence firms’ propensity to upgrade their products or production technologies.
A number of weaknesses in structural policy settings have contributed to Chile’s uneven productivity performance. Product market competition remains weak by OECD standards, as suggested by high price-cost margins. Furthermore, existing framework conditions for entrepreneurship do not encourage risk taking and the reallocation of production to new and higher productivity activities. For instance, entry and exit regulations for businesses are overly restrictive, and relatively high severance pay may limit labour market mobility. Until recently, the innovation policy framework favoured basic public research over business innovation. As a consequence, both rates of technological (product and process) and non-technological (marketing and organisation) innovation in firms remain low and production remains concentrated in low productivity activities.¹

Recent reforms in competition, regulatory and innovation policies will reduce firms’ anticompetitive behaviour, reduce the costs of complying with regulations and may boost the pace of innovation in the business sector. A major competition policy reform was adopted in April 2009, which will strengthen enforcement through an expansion of the investigative powers of the National Economic Prosecutor and through higher fines for cartel participation. A law passed in January 2010 (Estatuto Pyme) reduces red tape for small and medium-sized enterprises. The research and development (R&D) tax incentive introduced in 2008 improves incentives for innovation in the private

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Table 3.1. Total factor productivity growth in selected OECD countries, 1998-2008

<table>
<thead>
<tr>
<th>Country</th>
<th>1998-2003</th>
<th>2004-08</th>
</tr>
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<tbody>
<tr>
<td>Australia</td>
<td>1.4</td>
<td>-0.1</td>
</tr>
<tr>
<td>Canada</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Chile</td>
<td>-0.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Denmark</td>
<td>-0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>France</td>
<td>1.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Germany</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Ireland</td>
<td>3.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.3</td>
<td>-0.3</td>
</tr>
<tr>
<td>Japan</td>
<td>0.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.8</td>
<td>1.1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1.1</td>
<td>-0.2</td>
</tr>
<tr>
<td>Spain</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Sweden</td>
<td>1.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1.6</td>
<td>1.2</td>
</tr>
<tr>
<td>United States</td>
<td>1.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Average</td>
<td>1.0</td>
<td>0.9</td>
</tr>
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Note: OECD calculations based on Ministry of Finance data for Chile. 2007 for Australia, Switzerland, Denmark, Japan, New Zealand and United Kingdom.

Source: OECD Dotstat and Chilean Ministry of Finance.
business sector, and the newly created National Innovation Council has started to develop a long-term innovation strategy.

Despite such reforms, much remains to be done if productivity is to catch up with that in more advanced OECD countries. Even though the April 2009 reform has strengthened competition law enforcement, deterring anti-competitive behaviour, in particular by large corporations, will require diligent application of these rules. Setting clear objectives for the sectoral clusters, which are part of the long-term innovation policy strategy proposed by the National Innovation Council, and regularly assessing progress will help reduce the risk of misallocation of public resources. Establishing by law the National Innovation Council and the Innovation Fund for Competitiveness, which was set up as a new source for financing innovation, would ensure continuity for the long-term innovation strategy. Product market regulations on entry and exit remain restrictive and could be eased further. Resuming the pace of reform in product markets of the 1990s to foster productivity growth should be one of the main priorities on the economic policy agenda.

Policies to enhance product market competition

Despite high rankings on overall competitiveness indicators, a sound regulatory framework for network industries and openness to trade and foreign direct investment (FDI), competition as measured by price-cost margins of listed firms appears to be weaker than in a comparator group of resource-intensive OECD countries (Figure 3.1). Chile ranks high in overall competitiveness indicators compiled by policy institutes and international organisations, which measure the quality of regulation and the overall macroeconomic framework. The regulatory framework in network industries is generally considered sound (OECD, 2005). Chile is also very open to international trade and FDI, with a 6% multilateral tariff, an extensive network of free trade agreements (FTAs) (which has brought the average actual tariff rate paid on imports down to around 1%) and no restrictions on inward FDI. The profile of price-cost margins, defined as the ratio of operating income over total revenue, across industries in Chile is similar to a comparator group of resource-rich OECD countries. This is in line with expectations because price-cost margins are partly determined by the production technology in an industry, for instance, the level of fixed costs. However, the level of price-cost margins is higher in Chile than in the comparator group in all industries except mining. They are higher even in the manufacturing sector, which is open to international trade, and in the retail sector, which has a reputation of being competitive. But the largest differences can be found in transport and telecommunications and other services, primarily business services. This suggests that competition in Chile, in particular in the services sectors, is weaker than in some other resource-rich OECD countries.
One reason for high profit margins is that by OECD standards Chile has relatively restrictive product market regulation (PMR) in some areas, according to the 2008 OECD PMR indicators (Woelfl et al., 2010) (Figure 3.2). While Chile ranks high on broad indicators of overall competitiveness, the OECD PMR or the World Bank Doing Business indicators, which measure more specifically regulation affecting competition in product markets, suggest some regulation could be eased to catch up with the OECD average (Chile ranks 49th on the World Bank Doing Business indicators; World Bank, 2009).
While Chile has fewer barriers to trade and investment than most OECD countries, according to the OECD PMR indicator, administrative burdens on start-ups are higher than in almost all other OECD countries, which reduces the disciplining effect of potential entry on incumbent firms. Only in Mexico are administrative burdens imposed on sole-proprietor firms higher than in Chile, and no OECD country imposes a higher burden on corporations than Chile, which does so mainly through lengthy and costly registration and notification requirements. According to the 2011 edition of the World Bank Doing Business indicators, it takes 8 procedures (against 5.6 in the OECD), 22 days (against 13.8 in the OECD) and costs 6.8% of gross national income (GNI) per capita (against 5.3% in the OECD) to start a business. The government does not ask sectoral regulators to use alternatives to traditional forms of regulation and does not provide guidance on alternative forms of regulation.

Regulation of retail and professional services is stricter than in most OECD countries. In particular, Chile appears to have higher entry barriers in retail, mainly because of stricter registration and notification requirements, than any OECD country. A similar pattern emerges in professional services (accountants, architects, engineers and lawyers), in which entry barriers are comparatively high. Whereas education requirements to enter the professions are around the OECD average, exclusive rights of provision for accountants, architects, engineers and lawyers keep potential entrants out of the market. Advertising bans in these professions further restrict competition. Against the background of high price-cost margins in services (see Figure 3.1), the authorities should consider easing these regulations.

Recent competition policy reforms

Apart from overly restrictive product market regulation in some areas, a further reason for high price-cost margins may be the weak enforcement of competition law, in particular in the area of cartels. The institutional structure for competition law and enforcement is now sound. The National Economic Prosecutor (Fiscalía Nacional Económica, FNE) investigates cases of potential anticompetitive behaviour, while the Competition Tribunal makes decisions and imposes fines. Until the recent amendments to the Competition Act, the investigative powers of the National Economic Prosecutor were limited. It could initiate investigations, but could not make surprise inspections (“dawn raids”), intercept communications or seize documents. Because it was hard to obtain direct factual evidence, the cases brought before the Competition Tribunal often relied on indirect evidence, such as parallel behaviour, to imply that participants had reached an anti-competitive agreement.

Strengthening the enforcement of competition law and improving market transparency are especially important in small markets, such as Chile. A small market might be able to sustain only a small number of firms producing at the minimum efficient scale. Markets in small
economies therefore tend to have a more concentrated production structure, with only few firms serving a large share of the market. This could be productively more efficient than a less concentrated structure, of course. But a highly concentrated structure could also lead to allocative inefficiency. In an oligopolistic market structure, where each producer’s action has a direct effect on its competitors, prices may rise above competitive levels even if the parties do not explicitly reach collusive agreements (Tirole, 1988). A liberal trade regime helps to deter anti-competitive conduct, but it cannot substitute for a well designed and enforced competition law and market transparency, in particular in services that are often non-tradable.

Until recently, the absence of a leniency programme and relatively low fines have also contributed to weak enforcement. Many OECD countries, among them the United States and the European Union, use leniency programmes to detect cartels. In Chile, firms participating in cartels could not, until recently, apply for immunity in exchange for co-operating with the National Economic Prosecutor. This has further contributed to making the collection of direct evidence on collusive agreements difficult. Moreover, the level of fines is relatively low. The highest fine ever imposed was around USD 11.2 million against the two retailers in the “flat panel TV war” case. According to the income statement of one of the retailers involved (Falabella), the fine for the company amounted to less than 0.1% of its revenues in 2008.9

A 2009 reform partially addresses some of the enforcement issues, but may require additional resources for the National Economic Prosecutor. The reform includes an increase in the maximum fine for cartel infringements from around USD 15 million to around USD 23 million, enhanced investigative powers for the National Economic Prosecutor (it will be allowed to request “dawn raids,” intercept communications and search premises to seize documents), and a leniency programme for cartel infringements (the National Economic Prosecutor can grant full immunity to the first firm to confess to a cartel and allow fine reductions of up to 50% for others). It is expected that these reforms will lead to an increase in the number of cartel cases brought before the Competition Tribunal, which again may require additional resources for the National Economic Prosecutor.

The leniency programme is in line with international best practice, but competition policy enforcement could be enhanced further by linking the maximum fine for cartel participation to revenues on the relevant market and treating price fixing as a criminal offence. The Chilean leniency programme is in line with best practice in that firms can apply even after the start of an investigation has changed the trade-off between expected payoffs and costs of forming a cartel. The National Economic Prosecutor has also published the first draft of a guide on the conditions it will require for granting immunity, which will give the applicants legal certainty.10 By increasing the probability of being caught, the enhanced investigative powers for the National Economic
Prosecutor will increase the expected costs of anti-competitive behaviour to some extent. Nevertheless, it seems that, at least for large corporations, even the increased maximum fine remains too low, as it probably represents only a very small fraction of the additional revenues they could earn by forming a cartel. On theoretical grounds, it is desirable to link fines to firms’ profits from cartel participation, because even high fine ceilings may have weak deterrent effects if the expected profits from cartel participation are very large. To increase deterrence, the maximum fine could be set as a percentage of the firms’ revenues in the market involved in the conspiracy, as in a number of OECD countries. The authorities plan to make price fixing a criminal offence, which would further contribute to curbing incentives for cartel participation.

Moreover, Chile’s Competition Act would benefit from a more precise treatment of merger control, which is currently not mentioned in the text. Statutory support for merger control decisions is inferred from the prohibition against any conduct that “tends to produce” anticompetitive effects, but greater clarity and detail about merger rules and processes would reduce both uncertainty and inconsistency. The need to make inferences about what the Competition Tribunal would do in a given case – and indeed about whether the Tribunal even has jurisdiction – without any guiding statutory language creates the uncertainty. The uncertainty is then magnified by the inconsistency of the Supreme Court’s directions. Its disagreements with the Tribunal reveal a lingering judicial preference for making decisions in terms of legal categories rather than economic analysis. Currently, uncertainty remains about the methods for defining markets and the legal standard applicable to mergers. It is helpful that the Prosecutor has published a set of guidelines on merger analysis, but express statutory language about merger control is nevertheless desirable.

**Policies to foster entrepreneurship and business innovation**

Even by the standards of natural resource-abundant OECD countries, Chile’s exports of goods remain heavily concentrated in mining and natural resource-intensive products, partly reflecting low levels of innovation. Chile’s specialisation pattern also partly reflects its pattern of comparative advantage in natural resource-intensive sectors and a strategy of trade liberalisation and export-led growth over the past three decades. However, the specialisation pattern also reflects the slowdown in innovation within the technology frontier, defined as the discovery of products invented abroad but that are new to a country or firm. The number of products added to the Chilean export basket over the past decade was below the value expected for a country of Chile’s income per capita. Although export concentration has decreased over the past decades and services exports have increased, around 90% of Chile’s exports remain concentrated in primary products (mainly copper) and resource-based manufacturing (Figure 3.3). The share of non-resource-
based manufacturing is low – at any level of technological sophistication – relative to a control group of resource-abundant OECD countries. Innovation on the global technology frontier as measured by patent registrations is also low, which is to be expected for a country at Chile’s income per capita level. However, on-the-frontier innovation will become increasingly important as Chile grows richer, and an appropriate innovation framework will help avoid the risk that low on-the-frontier innovation becomes a drag on productivity growth.

**Start-up regulations and bankruptcy procedure**

Regulatory barriers and financing constraints have impeded entrepreneurial activity and the reallocation of resources from low productivity activities to innovative and productivity-enhancing activities. Difficult access to credit and overly restrictive regulation of start-ups have prevented the development of new entrepreneurial ideas, and an inefficient bankruptcy procedure has slowed the exit of inefficient firms from the market. A first-best policy to enhance innovation would therefore be to ease these regulations, a conclusion supported by a number of recent studies that have shown that a liberalised trade and FDI regime needs to be complemented by free entry and exit in order to generate productivity gains (see Harrison and Rodriguez-Clare, 2009, for a survey).

**Figure 3.3. Export composition in Chile, 2006**

Notes: Export shares for the benchmark calculated using simple average across countries. Lall (2000) product classification.

Restrictive start-up regulations not only act as a brake on competition but can also hold back innovation by restricting the entry of firms with new and innovative ideas. The government is currently considering several reforms to ease regulatory red tape for start-ups. In 2010 a law was passed that reduces red tape for small and medium-sized enterprises (Estatuto Pyme). In January 2011, a law was passed that reduces regulatory barriers for start-ups more generally and reduces the time to start up a business from 27 to 16 days, including by easing the obtaining of permits and the payment of taxes, and by streamlining notification requirements. The Ministry of Economy has also launched a pilot project to integrate the different administrative procedures for firms in a single electronic platform (Platform of Interoperability of Public Services, PISEE). In the medium term this platform could act as a one-stop shop for business start-ups.

Entrepreneurship could also be fostered by reforming the inefficient bankruptcy procedure and continuing to ease access to credit for start-ups. The bankruptcy procedure is inefficient, which holds back entrepreneurial risk taking and makes access to credit difficult. According to the 2011 edition of the World Bank Doing Business indicators, Chile’s bankruptcy procedure is lengthier and more costly than in most OECD countries. It takes 4.5 years and costs 15% of the estate to close down a business, as compared to 1.7 years and 9.1% in the average OECD country. Lengthy bankruptcy procedures and high costs can deter entrepreneurial risk-taking by making it costly to fail (White, 2005). Moreover, the protection of creditors during bankruptcy appears to be weak. While creditors in the average OECD country recover 68.6 cents on the dollar, in Chile they recover only 21.3 cents. As creditors anticipate low recovery rates, they can become reluctant to give credit to potentially very productive but risky businesses. Several initiatives to make the bankruptcy law more efficient are under way. The government has facilitated the reorganisation or orderly closing of SMEs through an extra-judicial procedure (Estatuto Pyme). The authorities have also launched an inter-ministerial working group to assess options for reform, which considers, among other options, the creation of specialised bankruptcy courts. The government has also taken significant measures to ease access to credit for start-ups. BancoEstado provides credit guarantees to small and medium-sized firms through its FOGAPE programme. Corfo’s venture and seed capital instruments help innovative but risky ventures obtain access to capital, and further support for this type of enterprise may come from a capital market reform enacted in August 2010 (MK III).

The innovation policy framework

OECD countries increasingly recognise that long-term productivity growth is strongly related to the capacity to innovate, i.e. to introduce new products, processes and organisational routines in the economy. Despite several recent policy reforms and significant increases in
innovation spending over past years, Chile’s innovation system still shows a number of weaknesses (OECD, 2007). R&D is mainly financed by the government and carried out in universities and public research organisations. With the caveat that data on the composition of R&D spending in Chile after 2004 are not available, only around 46% of R&D is financed by industry as compared to an OECD average of more than 60%. Links between universities, public research institutes and the private business sector are weak. As a consequence, the private business sector’s propensity to engage in innovation is low by OECD standards (Schwellnus, 2010).

In 2008, steps were taken to promote links between public research institutes or universities and private enterprises by introducing an R&D tax credit, among other measures. Under this scheme firms can claim a tax credit of 35% of the payments made to a public research institute they have contracted to conduct R&D, and can deduct 65% of the remaining amount from taxable income. Research centres and R&D contracts have to be certified by the Economic Development Agency (Corfo), and in-house R&D is excluded from the tax credit. It remains to be seen whether the tax credit will induce more R&D. While it is too early to carry out a full evaluation, it should be monitored continually. In addition it would be commendable to investigate the reasons for the relatively low number of certified contracts. At some later stage, when the current volume-based scheme is up and running, the Chilean authorities may consider a switch to an incremental scheme that provides incentives only for additional R&D.

The authorities have launched other promising initiatives that require the matching of public grants by private funds. One of these programmes is the joint Technological Consortia Programme of the National Commission for Scientific and Technological Research (CONICYT), the Corfo and the Foundation for Agricultural Innovation (FIA), which requires private enterprises and research institutes to set up technological consortia to be eligible for public grants; 24 consortia are currently in operation. Corfo’s innovation arm (InnovaChile) runs a similar technological consortia programme (although it does not require the participation of a university or technological institute).

Some Chilean institutions engaged in fostering innovation – notably Fundación Chile – have shown considerable skill in the discovery of new commercial opportunities and technology adaptation (Rodrik, 2004). Yet, public funding has traditionally focused on R&D rather than technology diffusion. According to the Innovation Survey, only 30.9% of firms having introduced an innovation (technological or non-technological) report R&D spending, as the bulk of innovating firms mainly rely on the acquisition of machinery and equipment. Indeed, only around 20% of firms’ spending on innovative activities is on R&D. Although most literature finds a link between R&D, innovation and productivity, Benavente (2006) finds no link between R&D spending and innovation in Chile. The move of InnovaChile to support any type of innovation
(product, service, marketing, organisational) and not exclusively spending recorded as R&D may help foster more market-oriented innovation, as does the support for the formation of technology consortia, including private enterprises and public research institutes that develop market-oriented technologies. To enhance technology diffusion the National Innovation Council for Competitiveness (2008) proposes to create an association of the 15 technological institutes (Sistema Nacional de Institutos Tecnológicos, SNITec), which would provide R&D and technological consulting services especially tailored to the needs of SMEs.

The government recognises that telecommunication infrastructure and services are key enablers of innovation, and it promotes widespread access to high-speed broadband networks. The Chilean telecommunication market is among the most dynamic and promising in Latin America, and it has a relatively well-developed infrastructure. Market entry is simple and there are no foreign investment restrictions; in fact, most of the current operators are foreign-owned entities. In the mobile telephone sector, Chile has four operators and its penetration rate is just over 100 subscribers per 100 inhabitants. Fixed-line penetration is 20.8 per 100 inhabitants, relative to an OECD average of around 40.0 lines per 100 inhabitants, and has started to decline from the last quarter of 2009, mainly because of fixed-mobile substitution. Chile enters the OECD with one of the lowest broadband penetration rates, around 10 subscribers per 100 inhabitants by the end of 2009, a rate well below the OECD average (around 23) but in line with countries at similar levels of GDP per capita. In accordance with the Digital Development Strategy for 2007–12, the main use of the Telecommunication Development Fund has been the development of high-speed Internet. From the standpoint of a broad-based and inclusive innovation strategy, a long-term challenge is to reduce the social digital divide. The skewed income distribution in Chile and the large income gap relative to OECD economies is one of the main reasons for low Internet access where entry costs (purchase of computer, modem) and recurrent monthly charges may require a larger proportion of disposable income than in the OECD area.

The institutional framework for innovation has been strengthened, and changes should now be enacted into law. Before the creation of the National Innovation Council for Competitiveness, several agencies in the ministries of economy, education, agriculture and planning were setting the innovation policy priorities in a decentralised manner, which made the formulation of a coherent long-term strategy difficult. Moreover, a multiplicity of funding mechanisms were targeting similar market failures and similar firms and were partly overlapping, thereby compromising the benefits of scale. The creation of the National Innovation Council (strategy setting) and the Innovation Fund for Competitiveness (funding) partly addresses these issues by separating strategy from funding, in line with international best practice (OECD, 2010b, Chapter 4). A proposed law submitted to Congress would
establish by law the National Innovation Council and the Innovation Fund for Competitiveness, thus ensuring the continuity of the long-term innovation strategy. As the Fund for Competitiveness works as a second-tier “fund of funds”, there may nevertheless remain scope for further reducing overlap between existing funding mechanisms.

Policies to strengthen innovation by fostering the supply of knowledge and inventions through investment in basic R&D and support for private-sector R&D are important, but attention also needs to be given to making markets work better for innovation and increasing the adoption of innovation by society. Such policies need not be costly; they can be very effective if well designed and based on a sound policy rationale. Well-designed demand-side policies are not directed at specific firms, but reward innovation and efficiency. Green tax reforms, for example, can encourage environmental innovation. Better and smarter regulation can also help increase the adoption of innovation.

**Potential risks of prioritising sectoral clusters**

A number of sectorally neutral or horizontal policies address presumed failures in the market for innovation. In recent years the authorities have started to complement these policies by more selective programmes and instruments, under which some sectors are singled out for priority support. Horizontal policies include the above-mentioned credit guarantee programme of BancoEstado and Corfo’s venture and seed-capital programmes. In 2010, the government launched a promising programme (Start-Up Chile) to attract foreign entrepreneurs, including by offering grants, residency visas and support for administrative procedures.

Over the past several years the authorities have moved away from an exclusively horizontal approach. The economic development agency, for instance, has a programme to attract FDI to high technology sectors. In 2007, the withholding tax for repatriated earnings was restructured to make investment in knowledge-intensive services more attractive (15% withholding tax rate on such services as compared to a 35% rate on other repatriated earnings). On behalf of the National Innovation Council, and based on both comparative advantage and growth potential of sectors, a global consulting firm has identified sectoral clusters that will receive priority in the allocation of funds.  

The government is aware of the risks associated with selective innovation policies. One risk is to pick sectors that would have formed successful clusters even in the absence of public support; another is to support sectors that are not viable. Cluster policies can help overcome co-ordination failures between private businesses that prevent the emergence of successful clusters. However, these policies may also erroneously target sectors in which private businesses are able to overcome co-ordination failures on their own. For instance, the Chilean wine industry has moved towards promoting the image of Chilean wine
abroad and increasingly co-operated in upgrading Chilean grapes through R&D as export prospects soared over the past decade. In this case, targeted public funds may have little additional effect. Conversely, if the National Innovation Council’s projections of global growth and Chile’s comparative advantage turn out to be inaccurate, public resources would be wasted on failing sectors. Moreover, labour and capital would be allocated to relatively unproductive uses, thereby reducing overall output and productivity.

More generally, the role of the public sector in selecting export sectors should not be overemphasised, and the public sector should focus on providing adequate framework conditions, such as an open trade and FDI regime, appropriate regulation and access to credit for potentially innovative enterprises. While in the presence of severe co-ordination failures, the public sector may at times play a useful role in identifying export sectors (for instance, the salmon sector in the late 1970s), in general a strong comparative advantage and adequate framework conditions will be sufficient for export success. The wine sector emerged as a successful exporter on world markets without public support, but it was supported by an open trade and FDI regime and appropriate regulation.

Capture may be another problem with selecting sectors for priority support, although the planned institutional setup for the National Innovation Council and the use of temporary grants limit this risk. According to the proposed law that establishes the institutional framework for innovation policy, the members of the National Innovation Council would be independent (nominated by the president and ratified by the Senate) and the terms of office would not coincide with those of the president. In this way, the members of the Council would be independent of the electoral cycle and less likely to make concessions to special interest groups to enhance their electoral prospects. The predominant use of the existing funding mechanisms of Corfo and CONICYT, which mainly use temporary grants to redirect resources to the priority clusters, also limits the risk of capture by special interest groups, as compared to “hard” industrial policy instruments, such as import tariffs or tax breaks.

To minimise these risks, the objectives of innovation policy programmes and instruments, including the cluster initiative, should be clearly stated and their evaluation strengthened. The authorities have identified the outcome targets of the industrial clusters. These should be monitored more closely. Moreover, cluster designations should be reviewed periodically and clear protocols should be established on when to withdraw public support. To avoid lock-in of failures, support should be withdrawn from clusters that continually fail to meet their performance objectives (Rodrik, 2004). Even for clusters that meet their performance objectives, support should be reviewed after a period of time has elapsed (sunset clauses); the objective should be that private financing eventually replaces public support. The National Innovation
Council has initiated efforts to promote and create a framework for evaluation. Evaluations of institutions, programmes and policy instruments have not been common practice in Chile thus far. Further efforts in this direction will be needed.

The cluster experience of InnovaChile and the programmes to support clusters should be used as an opportunity to strengthen regional capabilities in developing and implementing innovation policy (OECD and IADB, 2010). In Chile, these capabilities have traditionally been weak but need to be developed and will eventually gain in importance as the country’s innovation system advances.

Notes

1. Education policy and human capital formation, which are further major bottlenecks for productivity growth in Chile, are discussed in Chapter 4.

2. While the evidence is suggestive of weaker competition in Chile than in the comparator group, more research on price-cost margins is needed to reach a definitive conclusion. In particular, the sample of firms should be enlarged to include non-listed firms and the cross-country comparison should control for firm characteristics.

3. According to Falabella’s income statement, its revenues in 2008 were 3,727,186 million pesos, or around USD 7.1 billion (available at www.google.com/finance) and the fine imposed was 8,000 tax units, which in 2008 was equivalent to USD 6.9 million. The other retailer involved, Almacenes Paris, is owned by Cencosud, and a separate income statement is not available.

4. The United States reformed its leniency programme along these lines in 1993 and the number of applications rose from approximately one per year to two per month (Motta, 2004). Since 2002 the European Union has applied a leniency programme with near-automatic immunity and eligibility after an investigation has started. The Chilean leniency programme is in line with best practice in that firms can apply after an investigation has started.

5. This is according to a 2008 government communication to the Committee for Scientific and Technological Policy of the OECD, and OECD (2007).

6. Because the entire amount of R&D expenditure contracted with a certified research institute can be claimed, the credit may have little incremental effect on R&D spending. To make sure that firms benefit from tax credits only for additional R&D, some OECD countries (Ireland and the United States) use incremental schemes in which only additional R&D with respect to a reference base is eligible, while others (France, Korea, Portugal and Spain) use mixed-volume
incremental schemes. A volume-based mechanism can be used for setting up an incremental scheme, as it collects information on R&D per firm, which can then be used as the reference for the incremental mechanism. For a discussion of the advantages and disadvantages of different designs of R&D tax incentive schemes, see e.g. Bloom et al. (2001).

7. The selected sectors are fish farming, special interest tourism, copper mining, global services, processed food, primary fruit industry, pork and chicken farming and financial services. The National Innovation Council also identified five “transversal” platforms: human capital; research and development; infrastructure and natural resources; regulatory, legal and political framework; and financial services.

Further reading


