

## Chapter 2

# Moving forward in Chile: A shared vision for the future

Most countries around the world are defining and implementing new strategies to reap the benefits and minimise the risks of the ongoing technological and geopolitical changes. Chile, in line with global trends, has updated its strategy to sustain productivity and enable a shift towards a more knowledge-based growth. Chilean firms, entrepreneurs and society are revealing a new openness to thinking long term and to identify a shared vision for the future. The current policy approach builds on previous experiences and, in a spirit of continuity, presents novel elements that contribute to make Chile advancing in its path towards prosperity. This chapter starts with a brief overview of global trends in strategies foreconomic transformation, with a focus on China, Germany, Sweden and Emilia Romagna (Italy). It assesses the current Chilean strategy focusing on its governance and its anticipation and adaptation capacity, propensity to foster learning and its interconnectedness and embeddedness potential. It concludes by identifying three game changers for Chile and its future development agenda.

## The world is looking for new strategies to lead transformation

Globalisation is in transition. Despite some signs of recovery, the global economy has not yet recovered its dynamism and performance of the period before the 2008 economic and financial crisis. Most countries are facing fiscal constraints that challenge their spending capacity at a moment in which demand struggles to recover, and high and long-term investments are needed the most (OECD, 2013a; UNCTAD, 2017).

Major scientific, technological and production changes are revolutionising the economy and society at an unprecedented speed (OECD, 2017b). A high level of uncertainty characterises the global socio-economic landscape at multiple levels – from the kind of technology that will dominate in a given domain, to the forms of social contract that will be needed to regulate work in a platform-based economy, and the global race for leadership in the standards that will define the competitiveness advantage in the future. This socio-economic revolution is happening in a context where there is growing discontent over the capacity of the first wave of globalisation to deliver on its promises of more opportunities and higher wealth for all (OECD, 2017a,c; UNCTAD, 2016).

These macroeconomic, geopolitical and technological changes, coupled with stronger demands for shared prosperity and more sustainable and inclusive economic development models, are calling all countries – at different levels of development and wealth – to revise their strategies and to define new policy approaches (Box 2.1).

Most countries are defining visions for the future, scanning potential options and planning for the long term (OECD, 2017; Bitar, 2013). Awareness of the potential disruptive impacts of the ongoing technological change is growing, and most countries are taking steps to shape the future. Each country is following a unique approach, but three common characteristics emerge (Table 2.1):

1. **Planning for the long term and anticipating the future.** Most countries and regions have invested time and resources in defining long-term strategies to cope with the growing technological uncertainty and to set the basis for their production ecosystems to lead or at least benefit from the major global technological transformations. For example, the People's Republic of China has a vision to 2025, Italy's Emilia Romagna region and Germany have an industrial plan to 2020, and Sweden has a vision to 2030.
2. **Generating consensus to embrace change.** The ongoing technological and production transformation, coupled with growing demands for environmental sustainability and social inclusiveness, call for new forms of partnerships and agreements among all parties involved. The strategies for industry 4.0 are requiring new forms of dialogue and pacts to agree on shared responsibilities and actions. The Labour Pact signed in Emilia Romagna by all social, business and government parties is an example of how constructive dialogue can align different stakeholders on a modernisation path while at the same time preserving the values of a specific territorial reality (Emilia Romagna, 2015). In Sweden, the government has set up a bottom-up approach through an advisory board with the participation of industry, academia, government and civil society. China, Emilia Romagna in Italy, Germany and Sweden have different strategies, but they all count on high-level political support for bringing about consensus.
3. **Setting up tailored actions to enable transformation in each production ecosystem.** Digitalisation, the Internet of Things, big data, automation and new manufacturing techniques affect different activities and production ecosystems in different ways. Most governments, including regions like Emilia Romagna in Italy, and China and Germany, are implementing tailored roadmaps to enable each ecosystem to benefit from the changes and to minimise the potential downsides. Sweden is supporting specific pilot projects to test options that could then be viable in multiple contexts.

These actions focusing on specific ecosystems enable to better address the opportunities and challenges and foster a constructive dialogue among different stakeholders on issues linked to interoperability and sustainability standards, new social contracts, and new forms of business and societal organisation.

**Table 2.1. Most countries are taking steps to shape the future**

		<b>China</b>	<b>Emilia Romagna</b>	<b>Germany</b>	<b>Sweden</b>
Strategy		Made in 2025	Industria 4.0	Industrie 4.0	Produktion 2030
Time horizon		2015-2025	2014-2020	2010-2020	2013-2030
Budget		USD 10 billion	USD 2 billion	USD 250 million	USD 35 million (2014-2017)
Governance		Cross-ministerial, multi-level	Cross-ministerial, multi-level & participatory	Cross-ministerial, multi-level & participatory	Cross-ministerial, multi-level & participatory
Prioritisation	Horizontal	Automation & robotics, new materials, renewable energies	Nine enabling technologies	IoT, automation & robotics	Digitalisation, automation, resource ; energy efficiency, green technologies
	Sectoral	Aerospace and aeronautical, transport equipment, biopharma and advanced medical products	Five value chains (agro-food, construction, mechatronics, health industry, creative industry)	Machinery, electronics	Horizontal

Note: IoT: Internet of things.

In 2014, the Emilia Romagna region developed an industry 4.0 initiative in line with the national strategy (Table 2.1). The initiative is structured around nine enabling technologies that sustain industrial upgrading in five value chains: agro-food, construction, mechatronics, the health industry and the creative industry. It aims to stimulate the transformation of regional manufacturing services through three levers: digitalisation of production, global competitiveness and the circular economy. The initiative is governed through the participation of regional public authorities, industrial representatives, academia and labour unions in a Piloting Committee. This supervises the implementation of the plan and verifies that it complies with objectives. Programme implementation is coupled with a clear communication and promotion plan to secure the highest possible participation, along with a publicly available monitoring and evaluation system (see Chapter 3 for more details). The programme is funded by national, regional and European Union structural funds and private financing, amounting to a total of USD 2 billion for the period 2014-2020.

In Sweden the Minister for Enterprise and Innovation defined a long-term strategy – labelled *Produktion 2030* – in 2013. Sweden’s industrial and services activities are responsible for one-fifth of the country’s gross domestic product (GDP) and together account for 77% of the total value of Swedish exports. The strategy focuses on improving companies’ chances of dealing with the rapid technological transformation. It is built on four pillars: 1) exploiting the potential of digitalisation in all companies and activities; 2) greening the economy and improving resource-efficient production; 3) adapting industrial skills for the future; and 4) creating attractive innovation environments through pilot projects. For the period 2014-2017, 30 pilot projects have been financed with the involvement of 150 firms. Each project has obtained private sector co-financing of at least 50%. The total public budget for this period is USD 35 million.

There is no unique best approach for getting ready for the future and enabling the sustainable and inclusive transformation of the economy and society. But the ongoing industrial revolution, which is wider and deeper than a purely technological one, is requiring an “update” of the state, of its governance mechanisms and tools (Box 2.1). Chile’s current approach is outlined in the following section and in Chapter 3 of this report.

### Box 2.1. Production Transformation Policy Reviews: five pillars of successful transformation strategies

The Production Transformation Policy Reviews (PTPRs) are a policy assessment and guidance tool elaborated in response to countries' demand in the framework of the OECD Policy Dialogue Initiative on Global Value Chains, Production Transformation and Development. The PTPRs respond to the need of designing and implementing better strategies to cope with the opportunities and challenges offered by globalisation and digitalisation by identifying reforms that enable cities, regions and countries to succeed in a changing world.

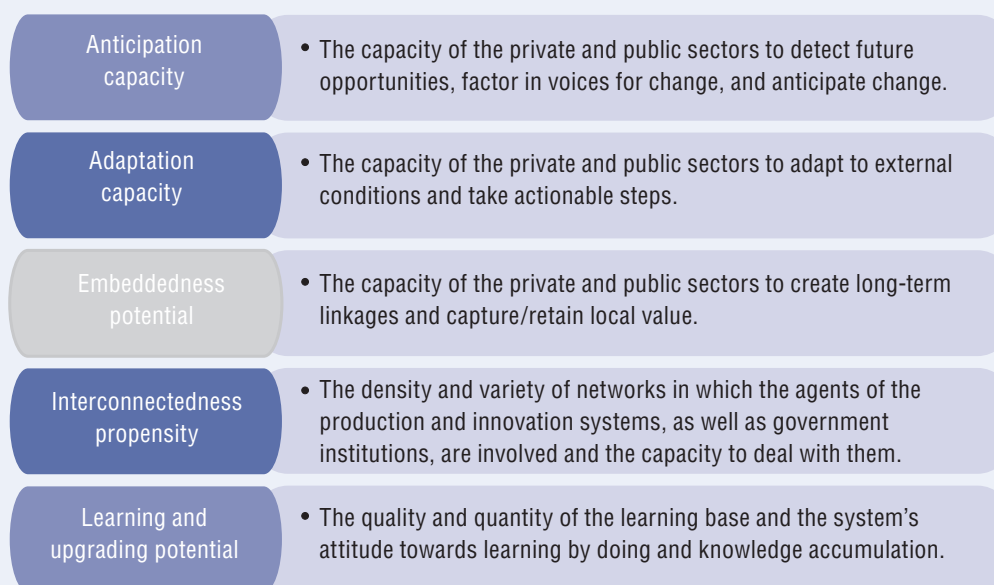
The PTPRs are a 15-18 month process based on peer-learning and multi-stakeholder dialogue to enable policy makers to better plan and act for the present and the future. The PTPRs assess the economic structure, the upgrading potential and the governance for economic transformation, identify lessons learned and clarify priorities for reform. They rely on peer review mechanisms through the participation of international peers and through a Peer Learning Group that steers each PTPR process.

The PTPR framework rests on three main assumptions:

- Growth is necessary for development, but there is a need to take into account not only the rate of economic growth, but also the qualitative dimensions (in terms of the capacity of this growth to be job-rich, to be inclusive and environmentally sustainable).
- Production structure matters for development. What countries produce and trade shapes not only economic growth but the capacity of economic systems to generate and redistribute rents and determines overall development outcomes.
- Policies and institutions, in the form of formalised strategies or multiple initiatives, play an important role in shaping development trajectories and in supporting the transition towards superior development stages characterised by the accumulation and diffusion of organisational, production and technological capabilities.

The PTPRs propose an interpretative framework that assesses countries' capabilities and potential in five domains (Anticipation capacity, Adaptation Capacity, Learning and Upgrading Potential, Interconnectedness Propensity and Embeddedness Potential). These derive from the recognition that there is no unique model of development and that there are common features that determine the capacity to succeed in the fast changing global landscape (Figure 2.1).

Figure 2.1. The five pillars of the PTPRs



Source: OECD (2017), *Production Transformation Policy Reviews: Actions to Succeed in a Changing World*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264276628-en>.

## Chile is updating its strategy to transform the economy

Awareness about the opportunities that global trends could offer Chile is growing. The country – its businesses and society – are revealing a new openness to thinking long term, and finding new ways to bring all stakeholders together to identify a shared vision for the future. Over the last decade, Chile has seen some of its large companies grow and become regional leaders in forestry, retail and the airline business. At the same time, society is strengthening its demands for environmental and social sustainability and for inclusiveness. A new pact between the business community and society is needed to allow Chile to embark on its path to prosperity. Being a stable and open economy will not be enough to sustain business development or respond to societal demands. The world is moving fast, and for Chile to be part of the global wave of change, a renewed approach to policy making and government-business-society relationship is needed. Going beyond ideological divides and finding a common ground to mobilise private and public actors is of critical importance to avoid marginalisation in the changing global context. It will also help to identify national development challenges – such as greening the economy – that can align interests and enable change in the economy and society alike.

### Since the mid-2000s, Chile has aimed to foster diversification through innovation

By the beginning of the 1980s Chile was already a fairly open economy. Until 1982, the country had a fixed exchange rate regime and then shifted to a floating exchange rate with bands up to 1999. In the 1980s Chile established a reserve system to control capital flows to favour the stability of the economy. In the 1990s it started to set up a wide network of bilateral and multilateral trade agreements that supported the country's consequent export growth. For example, the free trade agreements with Canada, the EU, the United States and China were signed in 1996, 2002, 2003 and 2006 respectively. In parallel, the National Fund for Science and Technology (FONDECYT) was established in 1981 to promote basic scientific research, and the Fund for Scientific and Technological Development (FONDEF) was set up in 1991 to finance joint and applied research projects between academia and the business sector. *Fundación Chile*, a public-private entity set up in 1976, played a key role in the 1980s and 1990 in identifying new economic opportunities for business development in Chile and fostering technology transfer and business creation. In 1992, the Chilean Economic Development Agency (CORFO) established the National Technology Fund (FONTEC) to promote business innovation through matching grants. In 1998, Chile introduced a fund to support the development of venture capital in the country, with a contribution of USD 2 from the public sector for each dollar invested by the private sector (OECD, 2013b). In 1999, CORFO financed the creation of incubators to support the creation of innovative, high-growth firms.

In the mid-2000s, Chile started to roll out targeted reforms to foster innovation and enable the creation of new firms, with a view to identify strategic opportunities and improve the country's position in the global economy. The sustained demand from China for Chilean copper (see Chapter 1) contributed to a high increase in the prices of raw materials which created a favourable climate for thinking about production development. At that time, the government had a plan, based on three key reforms, which represented a positive step forward (IDB/OECD, 2010):

1. The introduction of a royalty on mining, to enable multi-annual financing of innovation in the country.
2. The setting up of the Fund for Innovation and Competitiveness (FIC), administered by the Ministry of Economy.
3. The creation of the National Council for Innovation and Competitiveness (CNIC) (renamed National Council for Innovation and Development, CNID in 2016), an



advisory body answering to the Presidency and in charge of identifying strategic priorities for the innovation and competitiveness policy and for the FIC.

Of that original design, the bridge between the mining tax and the financing of innovation and competitiveness programmes (through the FIC) has not materialised due to a constitutional impediment that does not allow taxes to be earmarked as the common practice is to pool all fiscal revenues in the national budget. Nowadays, the FIC is operating and receives resources from the annual budgeting process. Currently, 30% of the FIC goes directly to the regions to implement the actions defined in their development programmes, and 70% is allocated by the two implementing agencies, CORFO and the National Commission for Scientific and Technological Research (CONICYT), through performance-based contracts. Although the CNID has been set up, it has not become a key space for ensuring co-ordination across ministries and agencies because of governance arrangements that reduce its convening and decision-making powers.

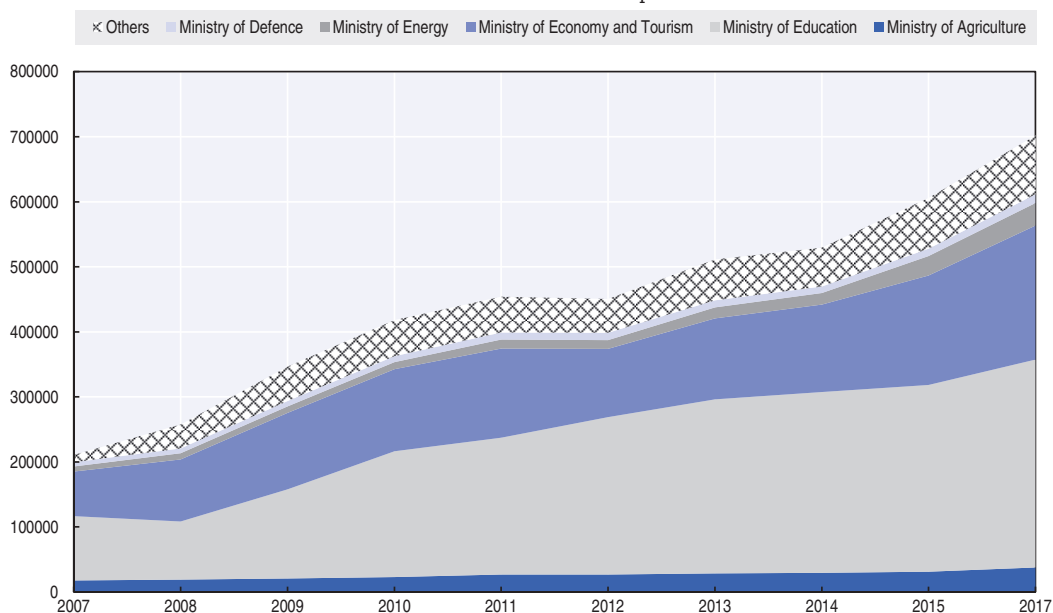
The National Innovation Strategy for Competitiveness, developed by the CNIC in 2007-08, identified strategic options for diversifying the Chilean economy. The strategy prioritised 13 areas of strategic importance to Chile, including mining, agro-food and global services. In those years, in addition to a targeted policy to strengthen human capital, reforms were implemented with a view to fostering innovation in firms. In 2008, the government introduced a law to give a research and development (R&D) tax incentive for firms, and CORFO started a programme to develop clusters of industrial excellence linked to the 13 strategic areas. This programme aimed at fostering investments in technical skills development, innovation in firms, and infrastructure in these areas. In 2011, the Agenda for Competitiveness laid out a new strategic vision to unleash the country's growth potential through the simplification of red tape and the promotion of start-ups. The well-known Start-up Chile programme was introduced as part of that agenda (OECD, 2013b; 2016b).

### **Chile is implementing reforms to address long-term challenges**

The evolution of the Chilean strategy for economic transformation shows a relative continuity over time, with the exception of the acceptance or not for more strategic and selective approaches. Since 2014, the government has embarked on an ambitious programme that included an educational reform to respond to the demand of young people for better and more inclusive education, targeted efforts to promote environmental sustainability, reforms to increase decentralisation and autonomy in the regions, and reforms for enhancing productivity, innovation and growth.

The Productivity, Innovation and Growth Agenda, started in 2014, builds on past experiences. It includes a large number of reforms in multiple areas and has a budget of roughly USD 1 billion (CLN 700 billion) for 2017; Figure 2.2). The public investment in areas linked to economic transformation – notably science, technology, innovation and entrepreneurship – has risen from 0.2% of GDP in 2007 to 0.4% of GDP in 2017. Most of the increase is explained by skills development and training programmes, such as *Becas Chile*, which provides scholarships for study abroad (see Figure 2.8 later in the chapter). Of the USD 1 billion planned for 2017, almost 45% goes to the National Council for Science and Technology (CONICYT), 29% to the Ministry of Economy, and the rest is executed by other ministries, including Foreign Affairs, Agriculture and Energy (Figure 2.3). Despite the fact that public investment has increased two times in real terms since the mid-2000s, it is still limited in absolute and relative terms compared to global trends. For example, Chile's annual investment in productivity and innovation represents one-third of the annual investment in R&D by a multinational company: in 2016 Chile invested USD 1 billion in actions linked to the productivity agenda, while Fiat-Chrysler invested USD 2.9 billion in R&D (JRC, 2017).

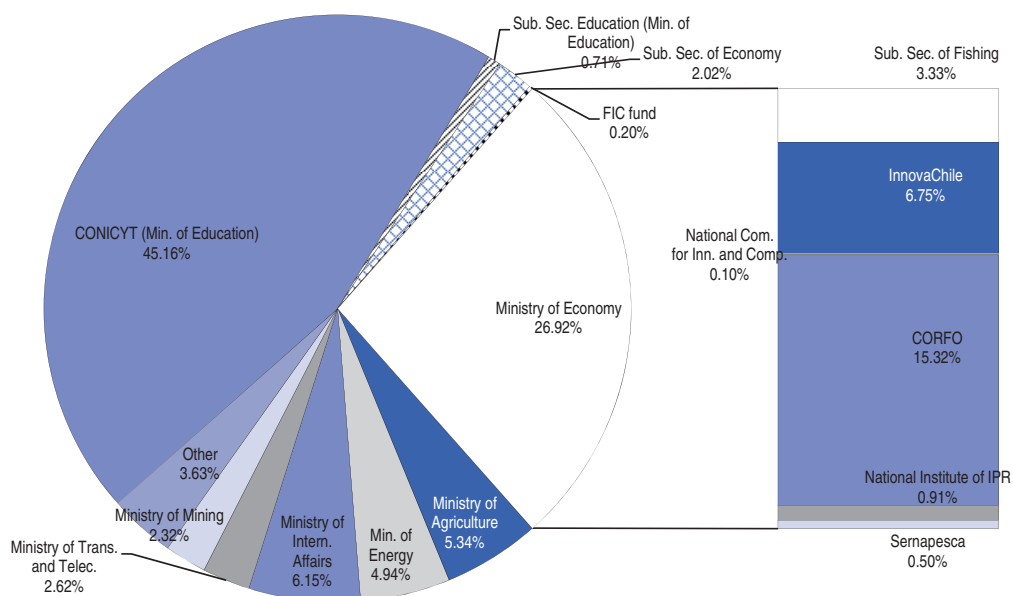
Figure 2.2. National budget for economic transformation (STI and entrepreneurship), 2007-17  
Millions of current Chilean pesos



Note: STI: science, technology and innovation.

Source: Authors' analysis based on data from the National Directorate for Budgeting, Ministry of Finance, 2017.

Figure 2.3. Breakdown of budget for economic transformation, Chile, 2017  
Share by ministry/agency



Note: CONICYT: National Council for Science and Technology; CORFO: Chilean Economic Development Agency; FIC: Fund for Innovation and Competitiveness.

Source: Authors' analysis based on National Directorate for Budgeting, Ministry of Finance, 2017.

The current agenda for sustaining growth and productivity can be categorised into four main areas:

- modernising the state for greater impact;
- enabling business development;
- fostering human capital and innovation; and
- enabling public-private partnerships to address strategic challenges.

The following sections describe the main actions in each area.

### **Modernising the state for greater impact**

The government has been active in reforming institutions to increase impact and deliver more effective results. The main actions in this respect have included: i) The creation of the National Productivity Commission (CNP) to facilitate strategic co-ordination and to better prioritise actions. The CNP was set up by national decree in 2015, inspired by the Australian experience that tracks back to 1998. The CNP is a consultative body for production development and pro-productivity reforms. It is composed by representatives from the business community, the academy, government and well known national experts; ii) Reforms to increase the role of regions in economic transformation and the creation of three CORFO regional pilot projects; iii) A proposal for creating a Ministry for Science and Technology, responsible for financing the training of advanced human capital and research, to which CONICYT would respond to as an implementing agency; and iv) The creation in 2016 of Invest Chile to attract strategic FDI. The agency replaces the previous Committee on Foreign Investment and has the mandate to attract FDI into Chile in areas that could be strategic for the future development of the country (Box 2.2). Invest Chile has a strong focus on emerging partners for Chile, including China.

#### **Box 2.2. Leveraging on FDI to strengthen new business activities**

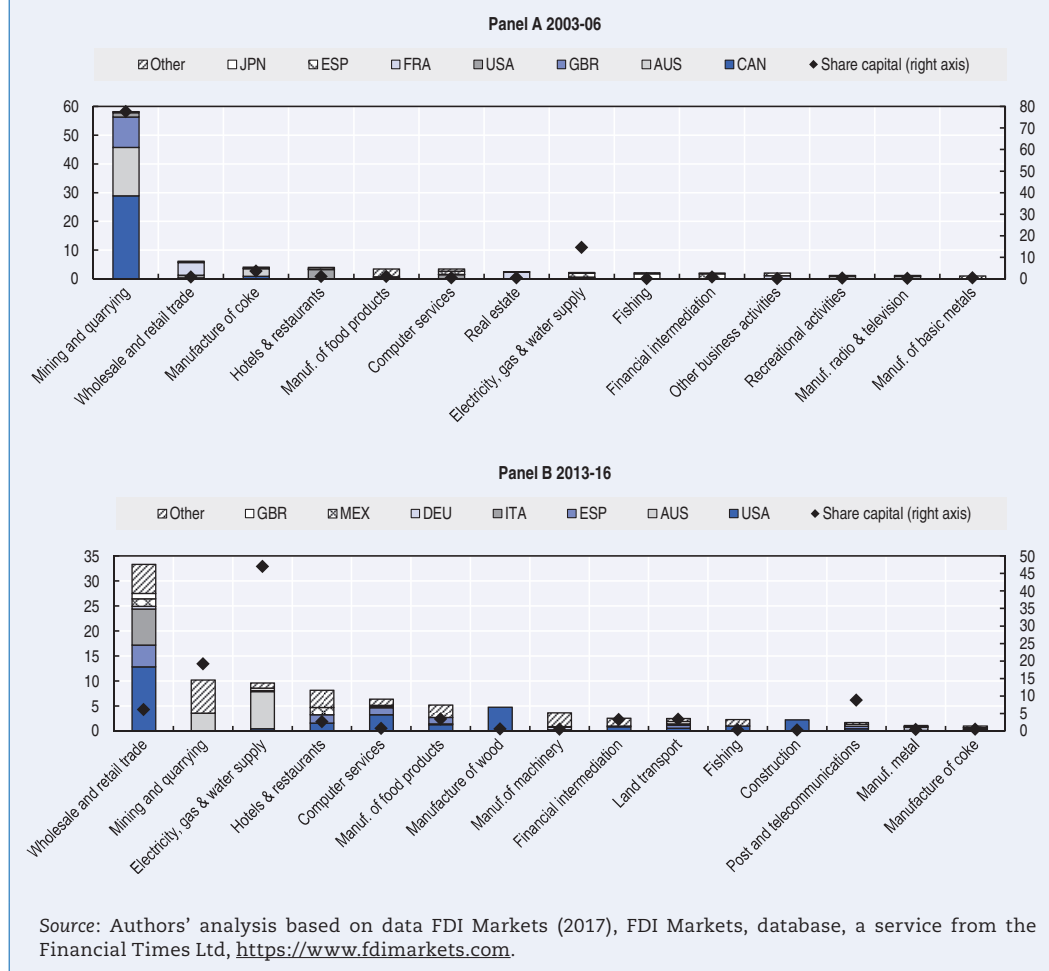
The openness of the country has helped to attract foreign capital. Between 2003 and 2006, mining and quarrying absorbed 77% of total capital and 60% of total jobs from greenfield FDI, mainly from Canada and Australia. Between 2013 and 2016, electricity, gas and water supply absorbed 45% of total capital and 12% of jobs and mining accounted for 20% of the capital and 11% of the jobs. Wholesale and retail activities absorbed 5% of capital and 33% of jobs (Figure 2.4, Panels A and B). In 2017 the Ministry of Economy, through CORFO, opened a call for proposals to expand the exploitation of lithium in the Atacama Salar. The winning tender will deliver royalties, and a share of the production will be sold at FOB prices in the country. Moreover, CORFO along with InvestChile are currently calling on companies willing to expand their lithium business activities in Chile to bid for a tender. Together tendering together aim to explore the possibility of entering into a new value chain by leveraging on Chile's abundant metal resources (52% of world reserves).



### Box 2.2. Leveraging on FDI to strengthen new business activities (Cont.)

Figure 2.4. Green field FDI by sector and country of origin, Chile 2003-16

Share of jobs by country of origin (left axis) and share of total investment (right axis)

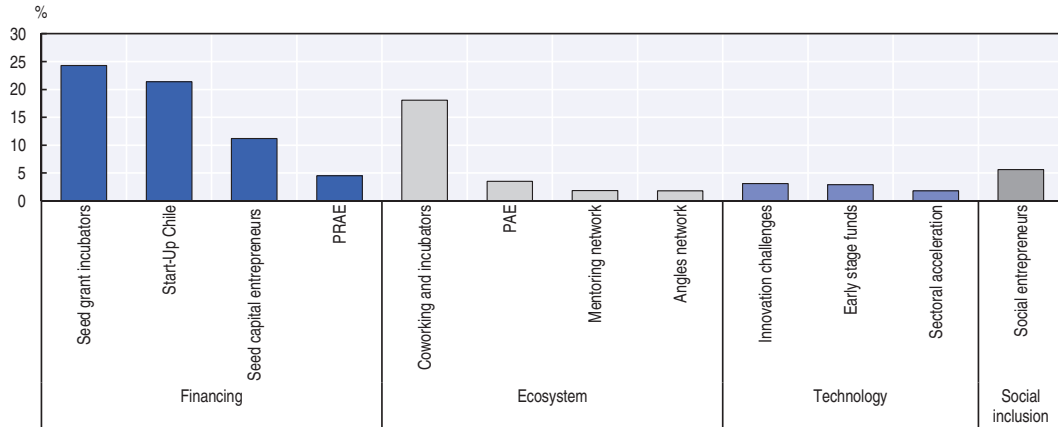


### Enabling business development

In the spirit of continuing the efforts at the end of the 1990s, and with the more recent emphasis on start-up creation since 2010, the country is continuing to update its policies to favour business development by reducing red tape and fostering start-up creation and expansion. The policy for start-ups focuses on: 1) financing for start-ups (61% of the total budget for start-ups in 2016); 2) ecosystem development (25%); 3) support to high technology start-ups (8%); and 4) start-ups for social inclusion (6%) (Figure 2.5) (OECD, 2016b). Since the launch of Start-Up Chile in 2010, the country has moved from a pilot phase of pro-start-up programmes to a more structured start-up policy linked to its national production transformation strategy. Chile has reformed the policy based on the results of its monitoring and evaluation, and the country now prioritises retaining more talent and businesses in the country (Figure 2.6). Chile also promotes the creation of start-ups in the regions outside Santiago, and supports the founding of firms that offer

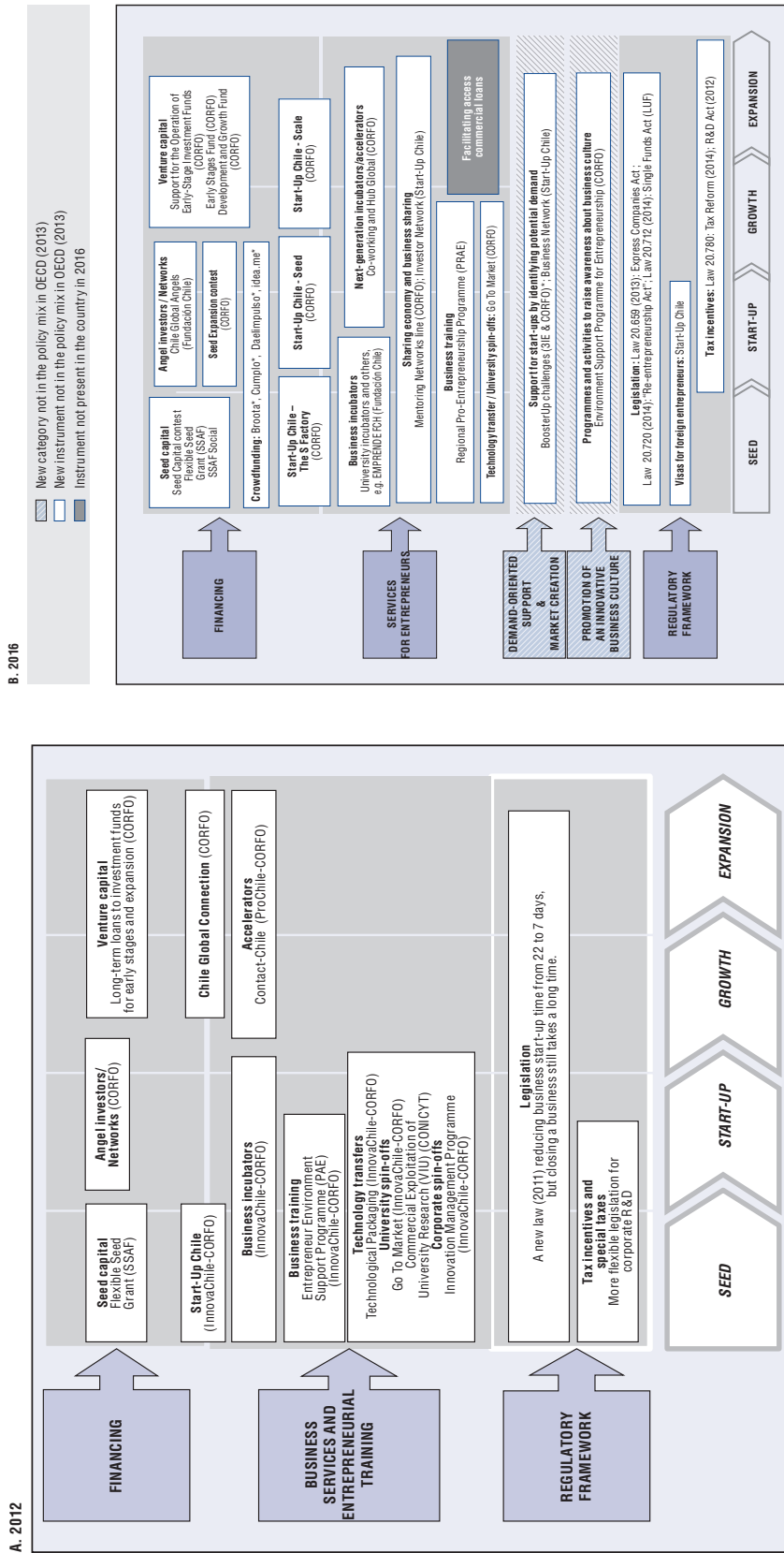
innovative solutions to social problems in the country’s strategic sectors (smart mining, the food industry and engineering, for instance). The country has closed the financing gap at the early stage; it has modernised services to entrepreneurs through more flexible mechanisms tailored to the needs of start-ups, such as collaborative workspaces and mentoring networks; and it has simplified the regulations for starting a business (a new law allows people to start a business in a single day). Private investment at the expansion stage and angel investors are still weak links in Chile’s financing chain (OECD, 2016b).

Figure 2.5. Budget for start-up promotion, Chile, 2016



Source: OECD (2016b), Start-up Latin America 2016: Building an Innovative Future, <http://dx.doi.org/10.1787/9789264265660-en>.

Figure 2.6. The policy mix to support start-ups in Chile is becoming more sophisticated, 2012-16



Source A: OECD (2013), Start-up Latin America: Promoting Innovation in the Region, <http://dx.doi.org/10.1787/9789264202306-en>.  
 Source B: OECD (2016b), Start-up Latin America 2016: Building an Innovative Future, <http://dx.doi.org/10.1787/9789264265660-en>

In particular, Chile has made it easier to start a business and has facilitated entrepreneurship. In 2014, the country introduced three reforms in line with the recommendations of the first review of start-up policies in Latin America (OECD, 2013b):

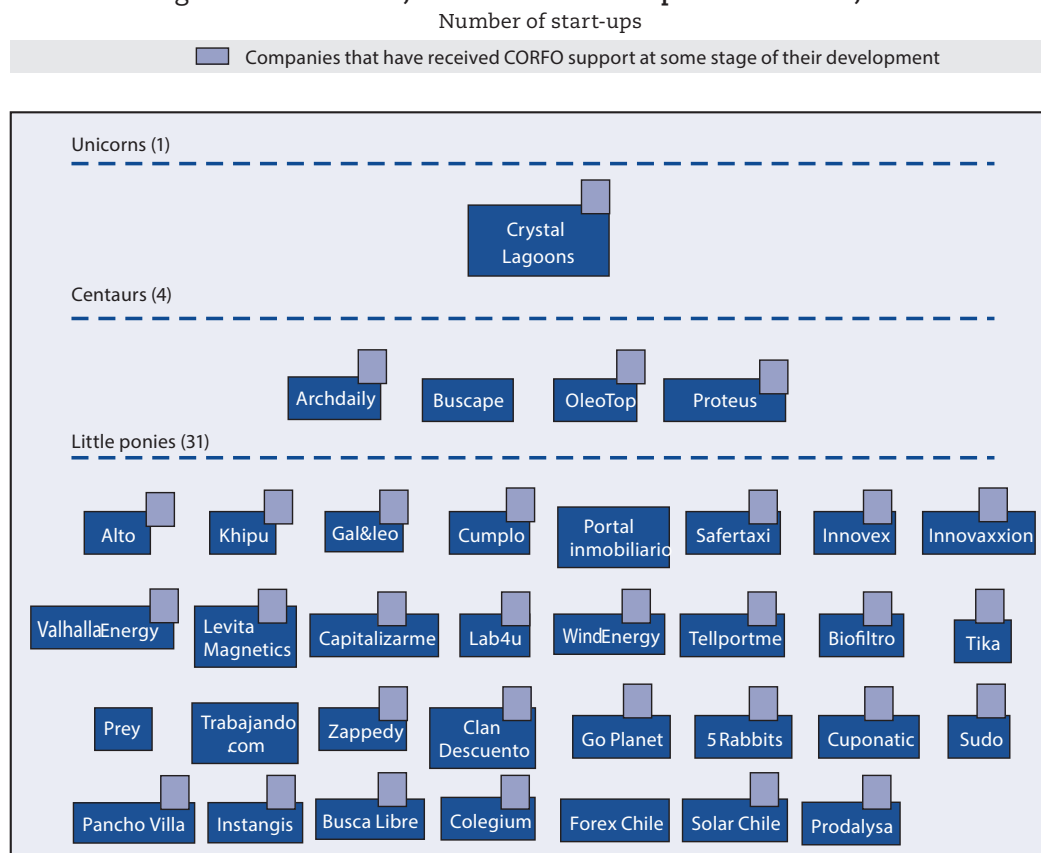
1. Law 20 659/2014 (*Ley de Empresas en un Día*, or Express Companies Act) simplified procedures for incorporating, amending or dissolving commercial companies. The act also introduced the “once only principle”, meaning that businesses only need to register once through a subscription to an online portal to all the government administrative sites. This has reduced the cost and time involved in starting up a business. Today almost 70% of all new businesses in Chile are registered through that portal. Until 2014, an average of 6 400 businesses were registered monthly; today this figure is up to 8 500 per month.
2. Law 20 720/2014 (*Ley de Re-emprendimiento*, or Re-entrepreneurship Act) facilitated swifter negotiations between creditors and debtors for unsuccessful enterprises and made it easier to start a new business thanks to the rapid discharge of the debtor.
3. Law 20 712/2014 (*Ley Única de Fondos*, or Single Funds Act) sought to make investment in the country’s investment funds bigger and more diverse, introducing tax incentives for foreign investment in Chilean investment funds, creating a single tax, and simplifying tax payment procedures.

Nevertheless, Chile’s science and innovation performance remains below the OECD average (Chapter 1), and start-ups are not emerging or growing naturally. In addition to the barriers they would face in any country, start-ups in Chile face systemic difficulties resulting from the low propensity for business risk within society and among investors; the low density of the science and technology system; and logistical barriers. However, even if start-ups are a new phenomenon in the country and Chile’s business ecosystem is not nearly as dynamic as those of more advanced countries, they are a reality, and one that is growing. As of early 2016, the Chilean ecosystem for start-ups included more than 1 000 start-ups supported by public policy, and 34 facilities across the country specialising in start-ups (co-working spaces, incubators and accelerators). According to CORFO data, the first five years of the Start-Up Chile programme saw the mobilisation of capital amounting to USD 420 million and the creation of more than 5 000 jobs (OECD, 2016b). Estimates by CORFO for the end of 2015 showed that Chilean start-ups included one unicorn (i.e. a start-up worth at least USD 1 billion), seven centaurs (worth between USD 100 million and USD 1 billion) and 32 little ponies (worth between USD 10 and 100 million) (Figure 2.7). These figures are comparable with those of more developed start-up ecosystems, such as in Singapore, which has around 1 000 start-ups, including 2 unicorns, 12 centaurs and 27 little ponies (OECD, 2016b).

Chile also supports university tech spin-offs. In a first phase, it provides financing for innovation workshops and covers the cost of presenting projects. In a second phase, it finances a one-month stay in the country or market chosen for the sale of the product, as well as the development of a practical programme in that country or market. In recent years, Chilean universities have increasingly been supporting start-ups. Some university incubators have received international recognition. Two appear in the ranking of the University Business Incubator, an annual list of the top 25 university incubators in the world, produced by UBI Global, a consultancy that specialises in analysing university business incubators. The International Business Innovation Institute (3IE) at Universidad Técnica Federico Santa María is ranked 17th globally, and Chrysalis at Pontificia Universidad Católica de Valparaíso is ranked 24th. At Pontificia Universidad Católica de Chile (UC), the science and technology research agency DICTUC focuses on the development of technological spin-offs. DICTUC created SIRVE, an anti-seismic technology firm, in 2003.

It also created Eduinova in 1995, a company dedicated to research and development in educational innovation and technology. Universidad de Santiago de Chile has the INNOVO centre, an incubator specialising in tech firms that has given rise to several successful spin-offs, including VoZE, a firm that began operating in 2013 and designed Chile's first prototype electric vehicle.

Figure 2.7. Unicorns, centaurs and little ponies in Chile, 2017

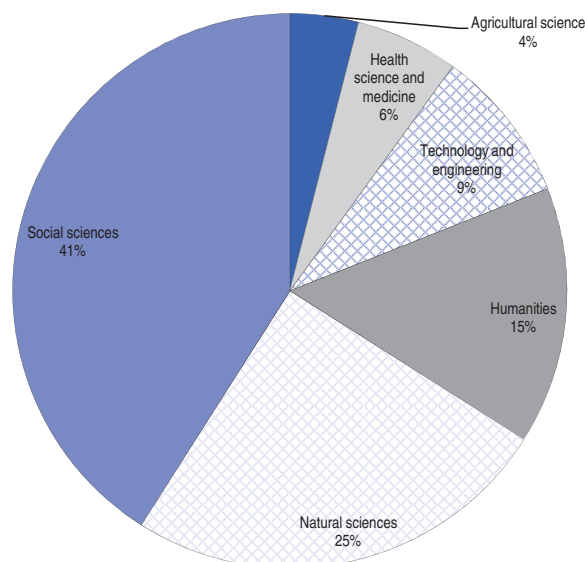


Source: Authors' analysis based on CORFO data, 2017.

### Fostering human capital and innovation

CORFO and CONICYT foster innovation using several tools. CONICYT fosters human capital development, including through *Becas Chile* which finances post-graduate training abroad. Between 2009 and 2014, 2 300 students participated in the programme, with (41%) in social sciences (Figure 2.8). CORFO manages several lines of financing, fostering innovation in firms from pre-competitive research to piloting and scale up. Some instruments specifically target SMEs. CORFO also promotes applied research by financing the creation of Technology Transfer Offices (TTOs) in co-operation with international partners, for example Fraunhofer-Germany and CSIRO, Australia.

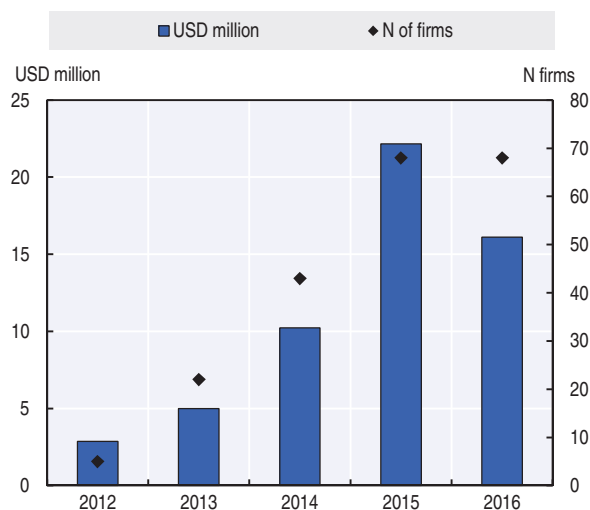
Figure 2.8. Doctoral graduate students in the *Becas Chile* programme by area of study, 2009-14



Source: Authors' analysis on information from CONICYT, 2017.

In addition, Chile has had fiscal incentives for innovation in place since 2008. In 2012 Chile implemented a reform (Law N° 20.659) to broaden the scope of the tax credit for R&D to include internal expenditures, increase the annual tax ceiling, simplify administrative requirements and encourage co-operation in R&D with domestic and international science and business partners. Companies of all size and regardless of their capital origin can apply to make use of these incentives, which cover up to 50% of their eligible expenditures. Between 2012 and 2016 overall, CORFO certified more than USD 60 million in tax credits (Figure 2.9). Companies in mining and related activities account for 50% of the total tax credits certified between 2012 and 2017; agriculture and forestry for 35%; and in agro-food processing for 18% (Figure 2.10).

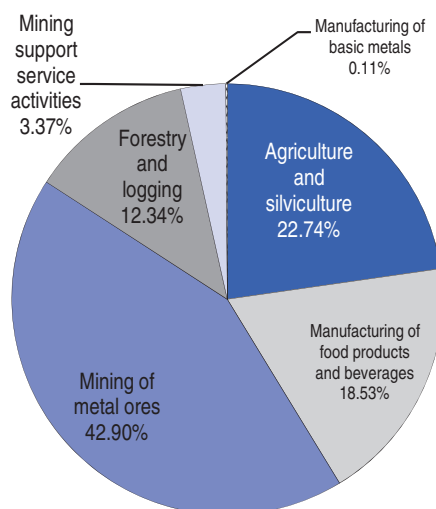
Figure 2.9. Certified tax credit in R&D, Chile, 2012-16



Source: Authors' analysis based on information provided by CORFO.



Figure 2.10. Certified tax credit in R&amp;D by economic activity, 2012-16



Note: The classification used is Isic 4.0.

Source: Authors' analysis based on official information provided by CORFO.

### Enabling public-private partnerships to address strategic challenges

The 2014 Productivity, Growth and Innovation Agenda seeks to identify the most significant co-ordination failures between the government and the private sector in order to get the country ready to operate in the emerging global digital context (Government of Chile, 2014). The agenda calls for greater progress to ensure a resilient, redundant and safe Internet connection; to define standards for interoperability and digital trade; and to modernise training at all levels – from vocational to post-graduate – to endow the next generation of workers and managers with the skills needed for the future.

While on average Chile is not quite ready to operate in the digital world, some initiatives at the micro-level are noteworthy as they represent positive steps forward. The University of Development (*Universidad del Desarrollo*) has strengthened its teaching collaboration with the private sector to bridge the gap between training and work, and is working on shortening the training cycle to increase students' employability. CORFO is financing the training and certification of workers in programming and ICT skills. A major challenge for skills development is the system of career accreditation and certification, which requires an update to bring it into line with the demands of the digital age, for example by shortening the training cycle.

In 2015, Chile created the Strategic Investments Fund (FIE). The FIE has a budget of approximately USD 160 million for 2015-18 to finance mid-term, high-impact innovative and strategic projects jointly selected by the government and the private sector. The FIE is administered by the Ministry of Economy. Its board is chaired by the Minister of Economy and comprises the Ministers of Finance, Energy, Mining and Agriculture and three leading representatives of the business community. The FIE's original aim was to provide a long-term financing for strategic projects jointly selected by the public and the private sector. In practice, its long-term financing capacity is limited as it has been constituted as a treasury fund with a time limit of 2018. At the end of 2016 the FIE adopted a monitoring and evaluation system led by an external advisory panel to increase accountability.

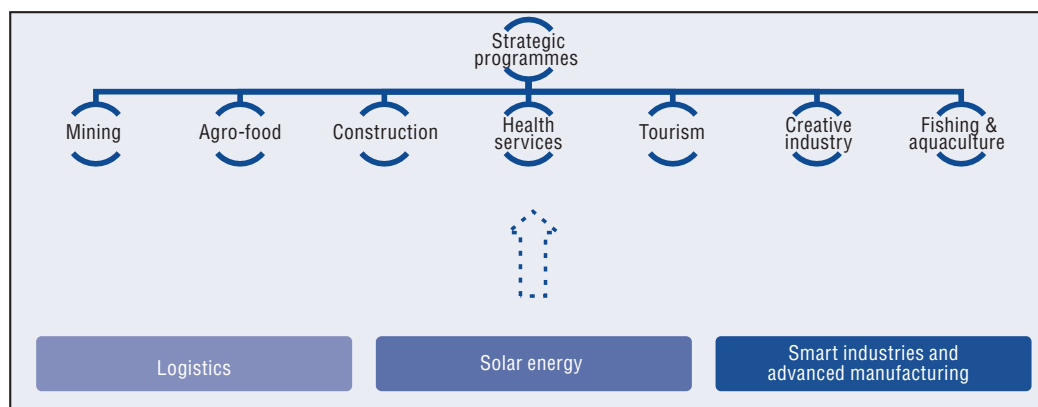
Since the mid-2000s, in line with the renewed willingness to shift gears and embrace innovation-driven growth, Chile has started to experiment with different approaches to enable diversification. The country adopted a "cluster" approach in 2008, with a

view to nurture ecosystems in key economic areas (including mining, global services and agro-food). The “cluster” approach built on the previous experiences in managing competitiveness programmes in specific industries such as forestry and salmon. In 2011, the programme was reformulated, eliminating the specific industry focus, in response to a logic that privileged horizontal rather than strategic approaches in policy making and public investment.

In line with global trends, Chile is now focusing on identifying key future challenges and it is working on setting up public-private partnerships to enable change in its industrial ecosystems. Based on the lessons from previous experiences, including the importance of early partnerships with key actors in the private sector and the need to mobilise government support beyond financing, including infrastructure and standards, the new approach focuses on strategic national and regional programmes. These have three objectives: i) promoting the diversification and sophistication of the Chilean ecosystem; ii) developing world-leading suppliers of higher value-added products and services; and iii) enabling a shared vision for the future in key industries through the co-ordination of public and private stakeholders.

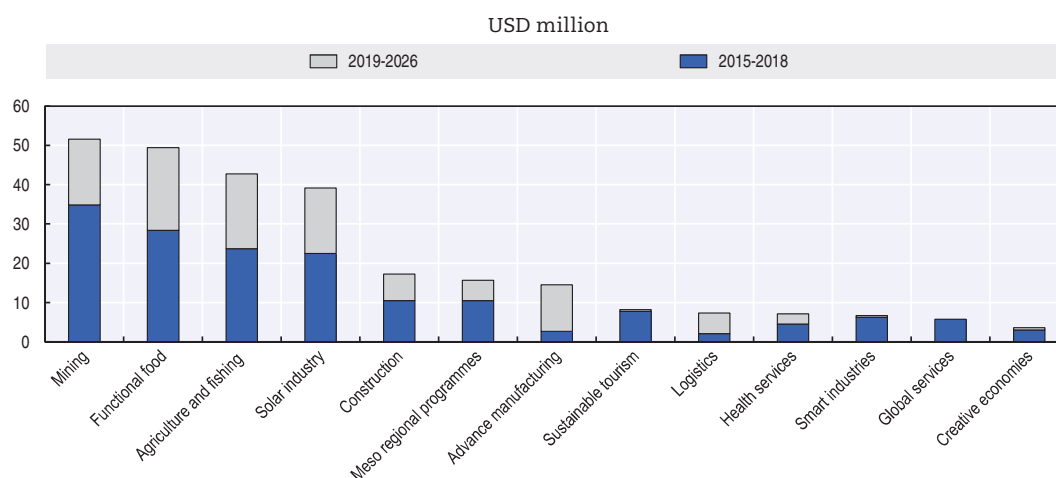
The strategic programmes focus on: mining, agro-food, construction, health services, tourism, creative industry, fishing and aquaculture, and is based on three horizontal enablers of future competitiveness: logistics, solar energy, and smart industries and advanced manufacturing (Figure 2.11). These priority industries represent around 65% of Chile’s GDP. In each area, the government has facilitated a process of multi-stakeholder self-discovery. This has resulted in the definition of road-maps with a 10 to 15-year time horizon, and has clarified gaps in areas such as human capital, physical and digital infrastructure, R&D, supply chain development, and standards and norms. These strategic programmes are articulated in national, regional and meso-regional actions. The total expected public investment for 2015-26 is expected to be USD 230 million. For 2015-18 the total approved public budget amounts to USD 160 million, or 0.1% of Chile’s GDP in 2016 (Figure 2.12). The programmes are managed by CORFO with co-financing from FIE and FIC. Chapter 3 contains an analysis of the strategic actions in solar energy, mining and agro-food.

Figure 2.11. Chile’s strategic programmes, 2017



Source: Authors' analysis based on the information provided by CORFO, 2017.

Figure 2.12. Public investment in strategic programmes, Chile, 2015-26



Source: Authors' analysis on information provided by CORFO and DIPRES, 2017.

The strategic programmes include a monitoring and evaluation system that follows the indications of the Interamerican Development Bank (IADB) (Boneu et al., 2016). It uses ad hoc surveys and considers four impact areas: 1) enterprise performance; 2) diversification and sophistication; 3) investment; and 4) governance and social capital (Table 2.2). The strategic programmes are in their initial phase of implementation, and it is therefore too early to assess their impact; however, comparing the governance and the planned actions with international experience reveals some good practices and possible areas for improvement (Table 2.3).

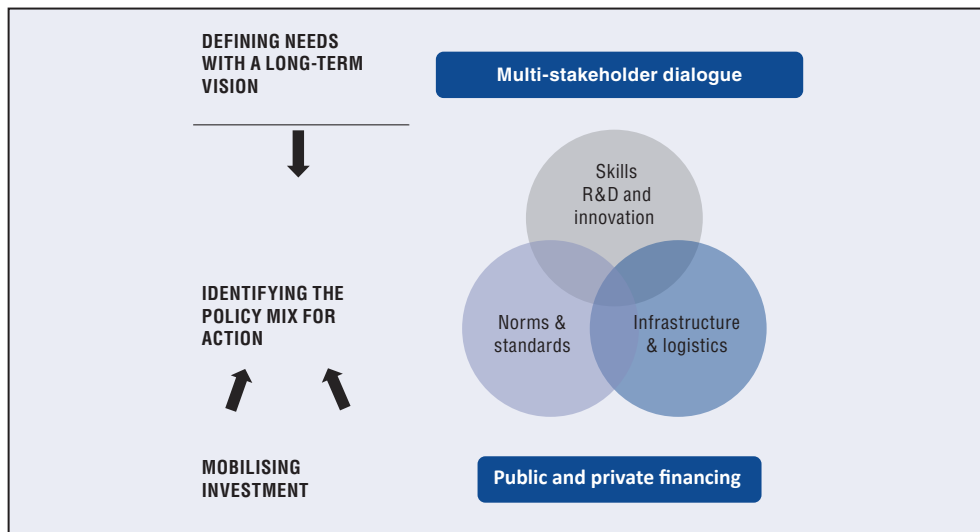
Table 2.2. Monitoring the impact of Chile's strategic programmes, 2017

Impact evaluation areas	Indicators
Enterprise performance	Share of exporting firms Employment Firms' turnover
Diversification and sophistication	R&D personnel New innovative products and process Entry of new firms
Investment	Share of private and public funds Number of innovative projects
Governance and social capital	Number and share of public and private representatives in each programme Governance satisfaction

Source: Authors' analysis based on information from CORFO; and Boneu et al. (2016), The Impact Evaluation of Cluster Development Programs: Methods and practices.

While it is globally recognised that different industries face specific opportunities and challenges, there is less consensus on: 1) which governance, transparency, and accountability mechanisms are best placed to enable policies to take into account and respond to these industry-specific challenges; and 2) how to design and manage a policy mix that attends the needs of each specific ecosystem and maximises the synergies among different industrial needs. Sectoral and industry-focused programmes are difficult to manage. The public sector lacks specific knowledge on scientific, technological and market opportunities, and incumbent actors often pursue their individual strategies without necessarily including the public good dimension in their utility function. In general, effective sectoral or industry focused programmes need to: 1) define needs with a long-term vision; 2) identify the policy mix for action; and 3) mobilise investment (Figure 2.13). To do it in an effective way, they need to rely on multi-stakeholder dialogue and mobilise private as well as public funding.

Figure 2.13. What actions for economic diversification and prioritisation?



Source: OECD (2017d), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May, 2017.

Chile seems to have found an effective policy approach by identifying enabling areas that are relevant for all industries (i.e logistics, solar energy, smart industries and advanced manufacturing) and by creating opportunities for the actors operating in different industries to share visions and challenges and define future specific needs in terms of skills, infrastructure, supply chain development, R&D and standards. This process, set up by CORFO, is a step forward in consensus building and in fostering public-private co-operation for economic development. In going forward, key priorities, drawn from the lessons learned from Chile and international good practices, include:

1. **Start small, experiment, and identify quick wins.** Legitimising state intervention in specific industries needs particular attention, as the risks of capture and corruption are high. Industry-specific programmes need to be technically feasible, yet they also need to be politically acceptable. Transparency mechanisms and bargaining capacities with multiple stakeholders are needed. In Colombia, for example, the Production Development Policy (PDP) started with by piloting some actions to gain credibility and increase trust.
2. **Generate synergies between industry-specific actions.** Future-oriented public-private dialogue in existing industries can be an effective way to reveal missing public goods and horizontal needs that could boost competitiveness across all industries, both existing and future ones. When governments are engaged in multiple industry-specific programmes, establishing formal mechanisms for comparing the results of industry specific consultations to identify common gaps can help to better prioritise public intervention in the creation of public goods.
3. **Go beyond pure economic assessments, and analyse the impact on jobs and the environment.** This will require new sets of indicators to assess transformation strategies according to a more comprehensive framework.
4. **Understand the needs of the buyer as the first step in developing a local supply chain.** The Japanese International Cooperation Agency (JICA) supports private sector development loans, technical assistance and services for firms in developing countries (Box 2.3). JICA scans the local economy, identifies potential suppliers, and sees how to link them up with buyers. JICA provides support for skills development, product development, and overall enhancement of the capacities of local firms, and links these activities with the needs of buyers located in special economic zones.

5. **Ensure local ownership.** Even when some targeted or sectoral programmes are initiated through international partnerships, ownership by local communities should be built and maintained. In the European Union, the Smart Specialisation approach relies on a bottom-up process of identification of territorial opportunities for the future, and in Colombia, the National Production Development Policy (PDP) starts with the identification of industrial development opportunities in specific industries linked to regional strengths.
6. **Avoid capture by incumbents and explore the potential to create medium-sized firms upfront.** Sectoral programmes require spaces for dialogue with multiple stakeholders, and mechanisms are needed to avoid the public interest simply being aligned with the strategic orientations of large and dominant firms. Strategic investors and big players are important, but it is also paramount to ensure that the sectoral programmes avoid responding to the agenda of monopolistic powers to the detriment of the development opportunities of other firms, especially in a sector characterised by wealthy medium-sized firms.
7. **Set up incentives to manage the extra rents earned by big winners.** Effective transformation programmes will result in new market structures, products and services. When significant public resources are invested, it is important to set up mechanisms that ensure the productive re-investment of the extra rents earned by certain economic agents through the creation of new market opportunities.
8. **Closely monitor implementation and evaluate impact.** Monitoring on a continuous basis and establishing feedback mechanism between strategy planning and monitoring to ensure fine tuning of policy design are good practices that increase accountability and effectiveness of policy action.

### Box 2.3. Fostering private sector development: lessons from the Japanese International Cooperation Agency (JICA)

JICA is active in fostering private sector development. This box summarises some key lessons learned from project implementation in different countries.

**Promoting multi-stakeholder dialogue in Ethiopia.** Ethiopia's vision is to be the leading nation in Africa in light manufacturing. To achieve this, the whole industrial and technological system needs to be transformed. For this, JICA invested in creating a multi-stakeholder policy dialogue to align the visions of multiple stakeholders. These dialogues should have high political leadership to ensure impact.

**Strengthening the quality and image of Ethiopian leather.** Japanese buyers had a preconceived, negative image of the quality of Ethiopian leather. The uniqueness and the qualities of the Ethiopian leather were not recognised by consumers and the price premium that they were ready to pay was very low. In addition, designs did not reflect the preferences of potential Japanese buyers. JICA set up a branding programme for Ethiopian highland leather. It developed high-quality products to show the quality of domestic production and promoted international awareness through participation in Japanese trade fairs. JICA also worked with Japanese designers to develop new design patterns for the local leather that match buyers' demands.

**Strengthening the automotive supply chain in Thailand.** The Thai government wanted to enhance local domestic capabilities in this sector. JICA mobilised the private sector and foreign investors to train and share good practices to enhance the capabilities of local suppliers.

**Building a tier 2 automotive supply chain in Mexico.** Japan has a long history of co-operation to strengthen the competitiveness of local suppliers in Mexico. JICA collaborated with tier 1 providers to scan and identify potential tier 2 suppliers. Japanese experts were then assigned to the potential tier 2 suppliers to increase their local capacities. As a result of the programme, the sales between tier 1 and tier 2 providers increased.

Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

Table 2.3. Progress overview of Chile's strategic programmes, 2017

Governance dimensions	
Anticipation capacity	√ Having road-maps with a long-term horizon (to 2025-30) takes Chile a step forward in line with international good practices. Aligning financing with the time-line of the road map will be an additional step forward.
Adaptation capacity	≈ In the fast changing technological environment the time for design and validating road-maps could be shortened from the current 13 months, while adaptability could be increased by introducing periodical revision of road-maps.
Learning and upgrading potential	√ The public-private consultations led to an effective identification of gaps in skills needed to compete in the future and of priority actions to bridge them. Growing cooperation between businesses, training centres and academia is a positive step. Overcoming barriers, including aligning educational accreditation processes with emerging needs, will be important to getting the right skills for tomorrow.  ≈ Setting up mechanisms to generate synergies between the different programmes and to enable learning and cross-fertilisation could align multiple-stakeholders to take actions and provide public goods which would act as competitiveness enhancers across all industries and firms, including digital infrastructure and skills. The creation of the Solar Research Institute, if endowed with a broader science base and mission could contribute to enhance learning opportunities in the whole economy.
Interconnectedness propensity	√ <b>Within government.</b> The programme benefits from multi-agency co-ordination. ≈ <b>Private sector.</b> Businesses participated in the road-map process, but enhanced participation of start-ups and SMEs would be needed as well as increased commitment by lead firms and investors would be needed in going forward. √ <b>Academia.</b> The programme benefits from commitment and co-operation mechanisms with academia and international research centres. √ <b>Civil society.</b> There is room to increase the participation of civil society in the process, and to identify new mechanisms to strengthen business-community relationship. x <b>Regional.</b> Strengthening regional ties could help to scale up investments and reach the critical mass needed to compete effectively at the global level. √ <b>International.</b> Scaling up on international cooperation could help closing knowledge and technology gaps.
Embeddedness potential	≈ There is a need to clarify procedures and standards to ensure environmental and social sustainability. x There is a need to increase the role of regions & territories in planning, implementation and monitoring. ≈ Open government and effective monitoring and evaluation are needed to track progress and performance and identify areas for reform.
Future challenges	
Ensuring the long-term commitment of the private sector. Mechanisms to avoid rent seeking and capture need to be in place to ensure that publicly-financed actions benefit all stakeholders and deliver public and club goods not available otherwise	
Aligning the budget with the strategy's objectives. Chile has an initial budget of USD160 million for three years (0.1% of 2016 GDP). In comparison, the Emilia Romagna region (Italy) has a USD 700 million budget for the period 2014-2020 in the context of the European Union Smart Specialisation Strategy	
Avoiding the overlap of programmes and actions and foster synergies among the different sectoral programmes. It is important to convey resources towards economic activities that have the greatest spill-over effects for the economy and society	
Ensuring high-level political ownership. The programmes are designed, implemented and revised within the Ministry of Economy through CORFO and with the financial support of FIE and FIC. In order to scale-up and foster production transformation it will be important seek higher political commitment	

Note: √: positive progress; ≈: margin for improvement; x: reform needed.

### Three game changers to ensure future policy impact

This section concludes the chapter by highlighting three game changers for the future of Chile. It focuses on one issue that emerged as a priority for reform in the short-term during the activities of consensus building carried out in the framework of the PTPR process: the need to “update” the public institutions and governance to cope with the broader and more sophisticated roles that the state is called to play in the future. The section also discusses two areas for reform that are key in the medium and long term



for Chile and that have been addressed during the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in May 2017 (OECD, 2017). These include: a) the importance of scanning for possible futures to design better policies and to endow the state with a capacity to do so in a structured way; and b) the need to advance in shifting towards a place-based approach in policy making as a key component of an inclusive and sustainable economic transformation of Chile.

### **Modernising the state to cope with a high-speed, uncertain and complex landscape**

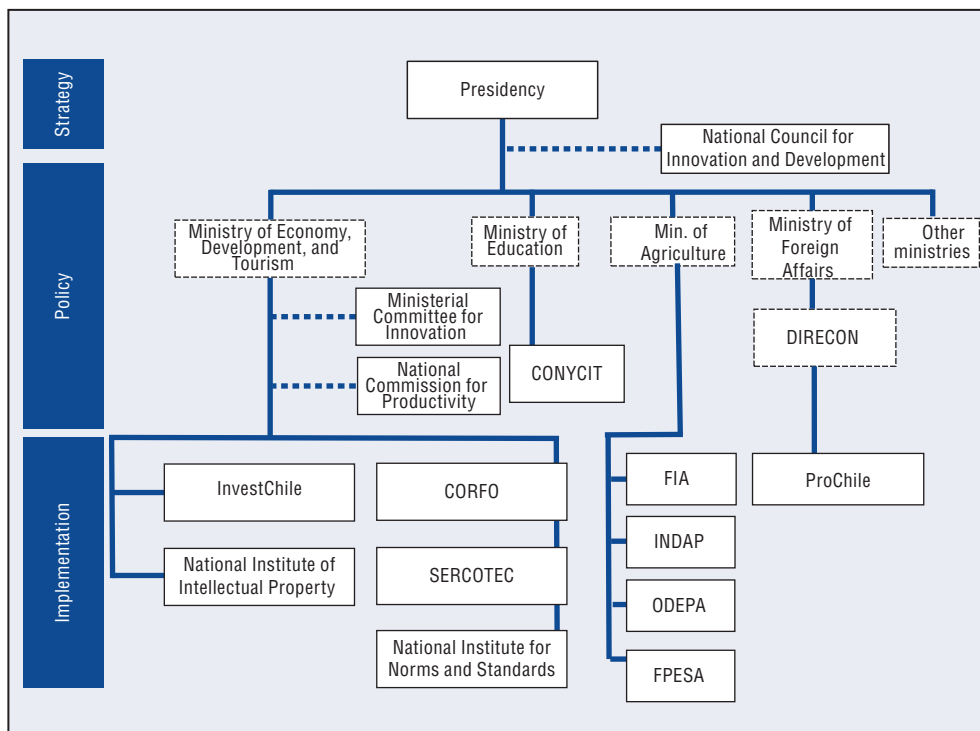
Chile's current institutional arrangements, funding mechanisms and policy mix for economic transformation (Figure 2.14) are the result of a long-term, cumulative process of trial and error, successful experimentation, and subsequent reforms to policy making (Griffith-Jones et al, 2017). Most of the institutions in charge of promoting Chile's industrial and scientific development have a long history (Figure 2.15). The Chilean Economic Development Agency (CORFO) was set up in 1939. This agency answers to the Ministry of Economy and is in charge of implementing policies for industrial and technological development. The agency in charge of promoting the development of micro and SMEs (SERCOTEC) was established in 1952; and CONICYT – the National Council for Science and Technology, the other major implementing agency responding to the Ministry of Education – was founded in 1967.

Over the years, several institutional reforms have been implemented within and across organisations. In some cases these changes have improved the governance, in others they created several institutional layers and a high level of complexity in the bureaucracy. In the future it would be important to preserve the state's modernisation agenda and making it more agile, effective and capable of responding to future needs. "Updating" the state includes an agenda on several fronts:

- **Leadership and co-ordination.** Ensuring high-level leadership for the transformation agenda would help to achieve consensus and mobilise actions across ministries. In going forward it would be desirable to reduce the multiplicity of co-ordination bodies (National Productivity Commission, National Council for Innovation and Development and Ministerial Committee for Innovation) and aim for a unique, but empowered and strengthened, body directly answering to the President. Co-ordination at the ministerial level on economic transformation also needs to be strengthened. The current negotiation process for annual budgeting between finance and each line ministry, coupled with weak co-ordination at the strategic level, weakens the capacity to prioritise actions in a more effective way.
- **Long-term financing.** Enabling long-term financing for strategic investment is also important. The creation of the Strategic Investments Fund (FIE) is a positive step forward, even though its nature as a treasury fund limits the long-term perspective in practice. To simplify the procedures it could be shifted to the responsibility of the implementation agency (CORFO), rather than being directly managed at the ministerial level.
- **Policy co-ordination.** As the challenges of global, digital, inclusive and environmentally sustainable economies are multidimensional and complex, increased co-ordination among the production, investment, trade, education and regional development agendas would be desirable. Increased co-ordination is needed to better harness the potential of key enabling areas for the future, such as the digital agenda and the definition of skills, standards and norms for the future.
- **Public-private partnerships.** Ensuring inclusive public-private partnerships is important to consolidate the recent progress of consensus building among business, government and society. Chile now has well-established consultation capacity with leading domestic and international firms. The next step would be to enlarge

the consultation base and increase the capacity for dialogue with entrepreneurs and small businesses. In the new technological paradigms, disruptive innovations increasingly come from start-ups and small firms. Having a governance structure capable of interacting with them will increase the capacity to design better policies.

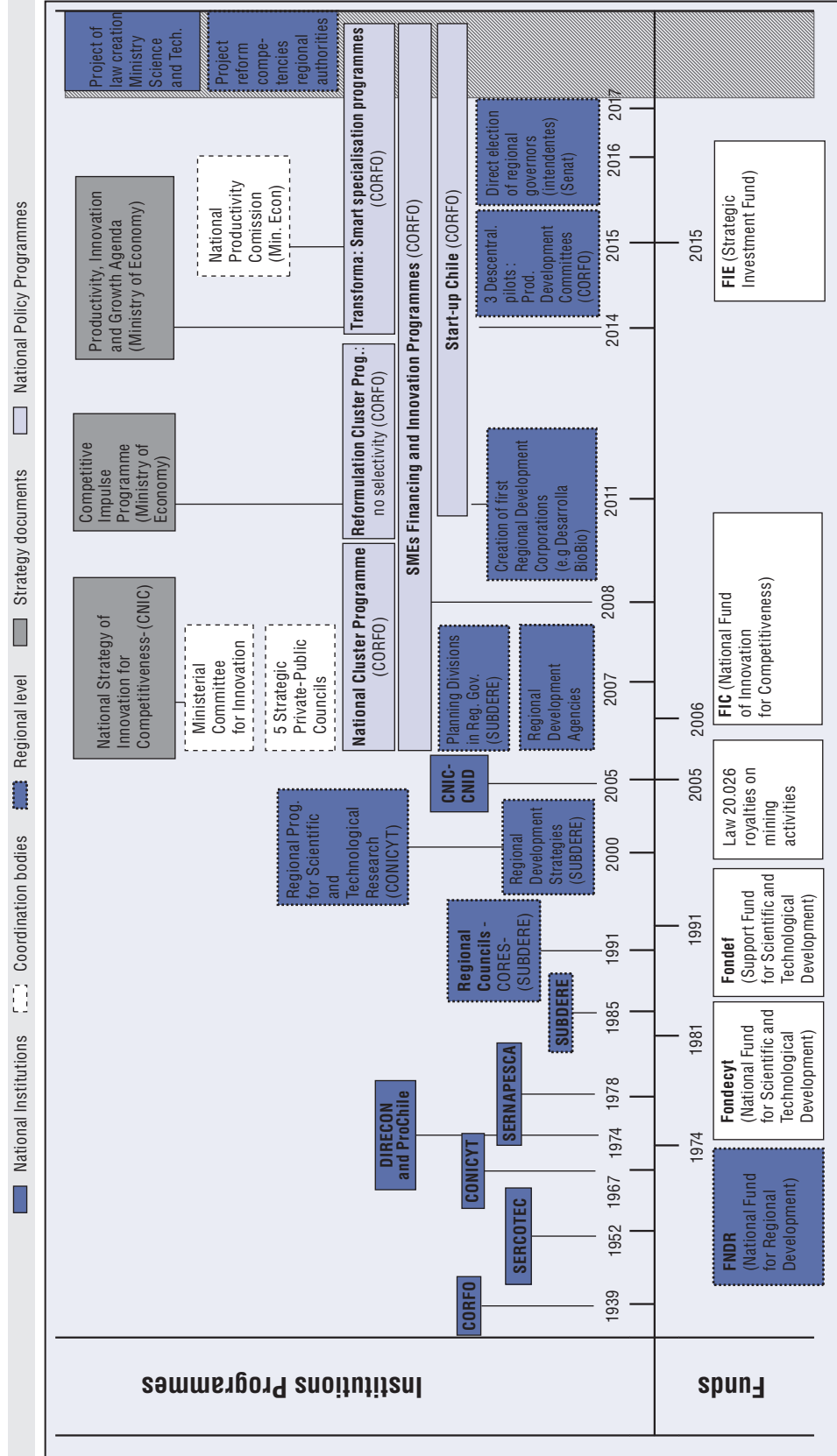
Figure 2.14. Chile’s governance of economic transformation, 2017



Note: CORFO: Chilean Economic Development Agency; CONICYT: National Council for Scientific and Technological Research; DIRECON: General Directorate for International Economic Affairs; FIA: Agriculture Innovation Foundation; SENCE: National Service for Training and Employment; SERCOTEC: National Service for Technical Cooperation. The organigram only includes ministries with implementing agencies at the national level.

Source: Authors’ analysis based on official information from CORFO and DIRECON.

Figure 2.15. A chronology of Chile's main institutions, funds and programmes for production development and innovation, 1939-2017



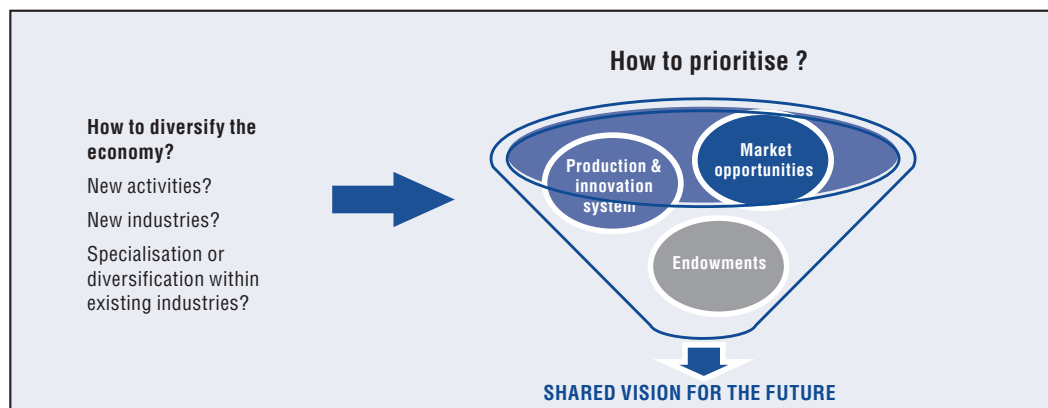
Note: CORFO: Chilean Economic Development Agency; CONICYT: National Council for Scientific and Technological; DIRECON: General Directorate for International Economic Affairs; SERCOTEC: Technical Cooperation Service; SERNAPESCA: National Fishing Service; SUBDERE: Under-secretary for Regional and Administrative development CNIC-/CNID: National Council for Innovation and Competitiveness/ Development.  
Source: Authors' analysis based on official information from CORFO and DIRECON.

### Scanning for possible futures to achieve consensus

As Chile looks into the future, there are many proposals for going forward. On the one hand, there is a call for advancing the simplification agenda, building on successes such as the 2014 Express Companies Act for creating a business in one day, enhancing support for starting and scaling up businesses, and strengthening skills, especially in technical and vocational training. On the other hand, there is an open debate on what Chile could do beyond improving productivity in its existing industries. This implies a more ambitious agenda with key priorities for the medium and long term (as the one put forward by the Ministry of Economy in the 2014 National Agenda for Productivity, Innovation and Growth). To be effective, this agenda needs to take into account potential scenarios for the future; ensure buy-in from all stakeholders, including local communities; domestic and foreign companies; and make adequate financing available. It is also important to ensure co-ordination among several policies, including innovation, industrial development, trade, infrastructure, energy, education, environment and regional development. The strategic programmes could form the base for this stronger, shared vision for the future. However, the vision for transformation is not yet mainstreamed among all stakeholders, within the government and across society (Table 2.4).

Identifying priorities is a challenging task, and even more so in the fast-changing global landscape in which we currently live. Selecting the areas on which to focus and mobilise resources is a major challenge for all countries (Figure 2.16). Some countries prioritise by enabling bottom-up processes of regional discovery in areas of potential advantage; others select key industries of relevance for the country based on current and potential advantages; and others prioritise by investing in scientific and technological development. Governments are not known for being at the forefront of mechanisms and tools for scenario building, nor for using scenarios and foresights in strategic planning. However, the complexity and uncertainty of the current global economic landscape, characterised by high-speed change, major global political shifts, and technological and digital revolutions, are increasingly calling for more sophisticated and forward-looking strategies. There is no unique way to increase the anticipatory capacity of governments (such as the capacity to detect future opportunities, to factor in voices for change, and to anticipate potential shifts in global and domestic dynamics). Much can be learned by looking at the various instruments some countries are putting in place to increase their forward-looking perspective and to enable effective prioritisation and co-ordination of actions for economic transformation (Box 2.4).

Figure 2.16. A shared vision is needed for effective prioritisation



Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

Table 2.4. Diversifying the Chilean economy: opportunities and challenges

Consensual issues	Controversial points
<p>Need to reduce copper dependency</p> <p>The history of sound macroeconomic management, good governance and trade openness could be an asset for managing the more complex policies needed for diversification in an industry 4.0 &amp; GVCs global landscape</p> <p>Need to identify mechanisms to better learn from FDI, and increase knowledge &amp; technology spillovers from foreign talents and firms</p> <p>Banks are perceived as conservative and having limited interest in backing up innovative ventures and projects</p> <p><b>Opportunities &amp; challenges of the current approach to prioritisation</b></p> <p>+ Existing initiatives (mostly led by CORFO) to create opportunities for change (creation of new companies, incentives for changing the behaviour of firms and technology centres &amp; universities)</p> <p>+ Scenarios and future scanning capabilities in the ministry of Energy and Energy Agenda 2050</p> <p>+ Creation of a Productivity Commission favouring public-private dialogue for identifying priorities for actions</p>	<p>Identification of priorities through:</p> <ol style="list-style-type: none"> <li>1. Sectors/economic activities approach</li> <li>2. Challenge-driven approach</li> <li>3. Market signals &amp; economic openness</li> </ol> <p>- Political polarisation might have a negative impact on planning and execution</p> <p>- Lack of a shared vision for the future =&gt; little commitment to high-impact-long-term projects, little patience in allowing diversification projects to deliver results, and difficulty in scaling up successful experimentations (e.g. cluster policies)</p> <p>- Excessive reliance on documents &amp; plans instead of creating the foundations for the plan to be implemented (e.g. having a sound STI and trade infrastructure, an ecosystem of companies and technology centres, and a mind-set that values innovation and change)</p>
<p>+/- Existence of spaces for forward-looking thinking (e.g. Future Commission in the Senate and National Council for Innovation and Development) but no mechanisms to translate future perspectives into a shared vision for action</p>	

Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

Effective prioritisation needs to be based on scanning for potential futures. And it needs to ensure the commitment of all actors (private sector, academia and local communities) from its inception. This means having mechanisms in place to engage all actors in defining strategic priorities, not only in the implementation of specific programmes and tools. In the case of Emilia Romagna, the competitiveness strategy follows a three-track approach: 1) it prioritises value chains with the consolidated local industrial and technological system; 2) it identifies two additional areas in which the region could excel in the future, based on shared perceptions of all the actors in the regional production and innovation system: cultural and creative industries, and life sciences; and 3) it directs investments to enabling areas that have cross-industrial implications, especially services and technology transfers for firms, with a specific emphasis on SMEs.

#### Box 2.4. Good practices to increase anticipation capacities for planning and prioritisation: lessons from the Peer Learning Group (PLG)

##### What is strategic foresight?

Strategic foresight is a structured, systematic approach to thinking about the future. It is not forecasting; it is about exploring and preparing for a range of plausible alternative futures. Most of the work done in public policy is on the expected possible outcome of existing events; the role of strategic foresight is to provide decision makers with an analysis of potential future scenarios to enrich the strategy setting process and define better policies for today and tomorrow. Why strategic foresight now? The pace of change at the global level is so rapid and uncertain that it is impossible to do responsible policy making without preparing for a range of alternative possible futures.

#### Box 2.4. Good practices to increase anticipation capacities for planning and prioritisation: lessons from the Peer Learning Group (PLG) (Cont.)

##### Good practices in strategic foresight for policy planning and prioritisation

There is no single best way to carry out strategic foresight. Several countries have invested heavily in developing these capabilities: Canada, Finland, Sweden and Singapore. From their experiences it is possible to identify six key features required of any effective strategic foresight exercise:

1. Political demand. High-level political demand is a precondition, because engaging policy making in foresight requires a cultural change in the approach to policy making. In Finland, for example, it is the Parliament that requests the development of future scenarios. In the US, potential scenarios are developed and given to the new President at the beginning of each mandate.
2. A dedicated centre of expertise. There is no unique ideal institutional arrangement, and each country needs to identify the solution that best fits its institutional governance and culture. But a common principle is to identify and empower a dedicated centre of expertise in charge of strategic foresight.
3. Co-ordination of foresight exercises across the whole government. From the experience of countries that have advanced the most in the elaboration and use of scenarios for public policies, the most interesting potential changes (and solutions) usually come from interactions of actors across different institutions, not only within institutions.
4. Targeted training both for experts in charge, and as part of the overall training of public officials.
5. Multi-stakeholder dialogue. Strategic foresight cannot be done behind closed doors and in isolation. There is a need to bring unusual stakeholders and disruptive voices on board. Strategic foresight can also be a powerful tool to reach alignment and shared visions across different groups – often views that are ideologically polarised tend to smooth out when thinking about medium- and long-term perspectives.
6. Integration of strategic foresight into national strategy setting. There should be a mechanism to ensure that the results of the strategic foresight processes are embedded into the national strategy and that they trickle down to each policy area.

Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

Scanning for possible futures and defining scenarios is not an easy task. On the one hand, civil society can be resistant to this exercise. Engaging in strategic foresight implies the recognition that future outcomes are uncertain. This conflicts with the generalised expectations of society that the policy makers in charge know what the future will look like, and that they are well prepared for it. On the other hand, the exercise is useful when it can go beyond the predictable, when weak signals are detected and transformed into potential game changers. Achieving these types of results is not often easy as most people tend to be conservative when identifying potential futures. In Canada, for example, the first results were not much different from the expected future. Therefore, the government changed its method of work and challenged the strategic foresight group into looking at options that could be more disruptive. Some of these changes may look plausible, or they may not. But the point here is that there is a benefit to thinking about what foresight means to policy, and to be better prepared for whatever radical alternative does happen.



In some cases, the anticipation of disruptive changes comes from the private sector. In these cases, the government needs to be able to react quickly and become a key enabler of transformation. For example, in Sweden the state-owned steel manufacturing company decided to shift towards carbon-neutral high-performance steel in 2015. The company wanted to get a head-start in the future of the auto-industry, in which one of the future plausible scenarios is dominated by electro-mobility and sustainability. Today, steel production uses old furnace technology that has high energy consumption. The company scanned for a number of alternatives, including the use of hydrogen gas. Shifting towards hydrogen gas would affect the whole supply chain and require the buy-in of all stakeholders, including science and technology institutes, universities and the overall supply chain network. In the Swedish case, the transformation could happen because the science, technology and innovation system works together on problem solving. The national energy company recognised that the production of hydrogen gas was feasible, and the private sector shared the costs with universities and research centres that were challenged by businesses to address this issue and provide alternative solutions. In this context – a dense and well-functioning innovation system that uses trust and incentives to work towards common goals, combined with a generalised pro-innovation mind-set – the small isolated vision of one agent (shifting towards carbon-neutral steel production) was transformed into a massive opportunity for diversification in multiple industries.

In Chile, there is no formal process or institutionalised space for scenario building and foresight to inform strategy setting. Back in the 1960s, Chile had a Ministry of Planning which to a certain extent played the role of scanning for possible futures to define scenarios and plan economic development policies. However, over time, that ministry was assigned to social development, and its incipient capability of scenario setting has been lost. Since 2005 the country has taken steps to rebuild this forward-looking capability, including a first analysis in 2008, led by the National Council for Innovation and Competitiveness and the Boston Consulting Group. Since 2014 the strategic programmes co-ordinated by CORFO explored future trends in key areas relevant for the country (e.g. digitalisation, IoT, electro-mobility, solar energy, and the emergence of new consumer demands that give a premium to healthy and sustainable food products). These steps served as basis for identifying key road-maps for the future. In its turn, the National Productivity Commission, a public-private consultation body created in 2015, is looking for options to scale up and increase value added from mining. The Future Commission of the Senate, set up in 2012, discusses future trends and identifies ways to better inform policies with national and foreign experts. The Chilean National Council for Innovation and Development (CNID) advises the Presidency on innovation opportunities by developing a strategy for the future (currently with a time horizon to 2030), focusing on big national and global challenges where Chile can draw on its unique assets (water management, solar energy, and smart and green mining, to name a few). Other initiatives include the Agenda for Energy 2050, the Engineering Agenda 2030 and the analysis implemented by the Council for Future Perspectives and Strategies. While these initiatives are looking into future trends, there is no systematic way to integrate these visions into a shared vision and concrete policies.

As Chile makes progress to foster dynamic change in its economy and society, government will need stronger internal institutional capabilities to scan and identify potential futures. Stronger anticipatory capacities could increase the ability to identify needs, prioritise actions and generate consensus on what actions are needed in the short and medium. These capabilities could play multiple roles, especially to:

- **Build consensus on Chile's future options and needs.** Strategic foresight can be a powerful tool to align visions for the future, to generate consensus, and create the required buy-in from all actors, necessary for its economic transformation to become a reality (Box 2.4).

- **Identify key needs so as to compete in the future.** Chile faces a challenge in training people in a way that matches the demands of a very dynamic international market. Scanning for possible futures might help identify specific skills gaps in unusual areas. For example, scenarios on the global functional and healthy food industry reveal that in addition to sophisticated agro, chemical and digital skills, modelling and predicting skills to better understand consumer behaviour are needed to compete globally.

### Shifting towards a place-based approach to policy making

#### Chile has experimented with different ways of increasing the role of regions in economic transformation

Chile is the most territorially unequal country in the OECD. Indicators of population, GDP growth and productivity are concentrated in the capital city (Chapter 1). This is not unique to Chile – some OECD countries, such as France and UK, show the same pattern. However, Chile’s situation is more extreme, as regions are not catching up in terms of productivity growth. Even mining regions, such as Antofagasta, are reaching their limits of labour-productivity growth, and future scenarios for mining are not the brightest for these regions.

Chile is highly centralised, though it has a recent history of gradual decentralisation (OECD, 2016a). On average, globally, convergence in income per capita is correlated with growing decentralisation. However, there are notable exceptions, such as New Zealand, which despite its high income per capita maintains a high level of centralisation in public policies. In Chile, regions account for 13% of general government expenditures (compared to an OECD average of 40%) and 27% of government staff expenditure (compared to the OECD average of 60%). The persistently high level of centralisation is perceived as a barrier to identifying new sources of growth.

The country has been gradually implementing reforms to increase the decision-making and financial autonomy of its regions. The national body in charge of decentralisation – SUBDERE (Under-Secretary for Regional and Administrative Development) – was created in 1985. In 1991 elected Regional Councils (COREs) in charge of co-operating with SUBDERE were created to develop regional development strategies. The decentralisation process has advanced slowly, with the election of the head of regional governments (*intendentes*) only approved in 2016. The draft law that regulates the competences of these locally elected governors is currently pending approval. However, most of these efforts have had limited impact due to poor capacity in regional governments, scant support to increase this capacity, and a lack of clarity in the mechanisms for resource transfer and budget management. There is growing consensus over the limitations of an excessively centralised approach, which not only contributes to reinforce the existing specialisation pattern (retail and finance in the capital region and extractive industries in the mining regions), but also limits the possibility to identify new opportunities for innovation, for the creation of new firms and the participation in regional and global value chains in different areas. Excessive centralisation therefore limits Chile’s ambition to achieve an inclusive growth strategy.

However, much less consensus exists over how to advance in the decentralisation process. There are large variations across regions in terms of government capacity and the readiness of local actors to actively engage in transformation strategies. When consulted, local actors tend to reveal valuable information about opportunities and challenges for production development in their territory, and are eager to be more actively involved in national and regional strategies (Box 2.5). Institutional and professional capacity at the sub-national levels of government influence its ability to design and implement

effective policies. Usually lower levels of government suffer from capacity gaps relative to the central government, and there are often large differences among regions and provinces. Investing in institutional capacity at the local level will be crucial for realising the potential for production development in Chile's territories.

The first efforts to build capacity in the regions to support production development and innovation date back to 2007, with the creation of Regional Development Agencies (RDAs) (IDB-OECD, 2010). The RDAs were created with strong support from the national administration, which was supposed to be gradually reduced over time. In 2011, the RDAs were closed and transformed into private corporations in charge of regional development, thus increasing their relationship with the Regional Councils and reducing their dependency on CORFO. Each Regional Council decides on the composition and governance of its corporation. As of 2017, 10 of Chile's 15 regions have a production development corporation (such as "Desarrolla Bío-Bío", "Agencia Araucanía" and "Regional Production Corporation of Coquimbo"). The corporations are regional entities financed by regional governments and the private sector. These corporations perform mixed functions, from advisory in strategy setting to the implementation of production development policies.

Since 2014, Chile has given renewed impetus to the decentralisation agenda: it aims to increase the autonomy of regional authorities and the budget allocated to regional development, as well as the share of the budget directly executed by regional governments. The agenda, which is accompanied by a plan to transfer competencies for production development to regions, includes:

1. A constitutional reform allowing for the direct election of regional governors (*intendentes*). This was approved in 2016; however the reform on the effective power of these regionally elected governors is still pending approval.
2. A reform for transferring competencies and budget from the central to the regional governments (currently under discussion in Parliament).
3. Targeted financing for capacity building in regional and local governments.
4. The regionalisation of policies for production development. CORFO is planning to decentralise 40% of its budget and it is now piloting this decentralisation process in the regions of Antofagasta, Bio-Bio and Los Rios. It plans to expand the experiment to three additional regions in 2018 and to all regions by 2021. The pilot projects include the creation of a Production Development Committee in each region. These committees co-ordinate the implementation of CORFO and SERCOTEC policy tools in the regions. While these pilot projects are perceived as way to increase the space for regional voices in Antofagasta and Los Rios, in Bío-Bío the pilot project is not unanimously considered as an advance in regional autonomy. This is because Innova-Bío-Bío has been operating in the region since 2001 as a kind of decentralised CORFO unit. Additionally, under the strategic programmes initiative, 5 meso-regional and 20 regional sub-programmes are under implementation. Each programme is associated with a specific economic activity that aims to reduce co-ordination gaps undermining the development of existing sectors in the regions; incorporate and foster innovation in the sectors with a clear competitive advantage; and increase productivity through highly qualified human capital.

### Box 2.5. Moving forward: Three scenarios for the Bío-Bío region in 2030

Bío-Bío is the third most populous region in the country (accounting for almost 12% of the national population) and comes fourth in terms of its share of national GDP (7%). At present it is divided into four provinces (Ñuble, Concepción, Bío-Bío, and Arauco), with Concepción hosting 46% of the population. Ñuble will become an additional region in 2018. It hosts a large number of universities and has a good track record in patenting and in collaborative processes between universities and the private sector. Bío-Bío is a manufacturing region (representing 23% of regional GDP, compared to a national average of 10%). The region is currently the second manufacturing region in the country, accounting for 16% of national manufacturing value added (after the Metropolitan Region of Santiago, which accounts for 45% of total national manufacturing value added).

Bío-Bío is quite diversified. It has a mining sector (which is declining), activities linked to fishing and agriculture, a growing agro-food and fresh fruit industry and a strong manufacturing tradition, linked to the wood and pulp and paper industries. Half of the planted forests in Chile are in Bío-Bío. The region mostly exports commodities linked to unprocessed wood and fresh and frozen fruit. Its major export destinations are the United States, China and Japan, which account for 19%, 18% and 10% of its exports respectively (National Statistical Institute - Bío-Bío Regional Direction, accessed December 2016).

During the PTPR review process a scenario-setting exercise was carried out with representatives from the regional government, CORFO, the private sector, professional associations, opinion leaders and regional counsellors (COREs). This led to key strengths, weaknesses, opportunities and threats being identified (Table 2.5), as well as several scenarios (outlined below the table).

Table 2.5. Strengths, weaknesses, opportunities and threats for the Bío-Bío region

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Relatively diversified production matrix</li> <li>• Natural resource abundance (in the timber industry and agro-food production)</li> <li>• Strong university and research base, human capital formation</li> <li>• Incipient attempts to increase co-ordination between universities and the private sector</li> </ul>	<ul style="list-style-type: none"> <li>• Limited regional autonomy</li> <li>• Wage differentials with the metropolitan region leading to brain drain</li> <li>• High inequality in the distribution of income and wealth</li> <li>• Poor connectivity (ports, roads, etc.)</li> <li>• Low cultural propensity for cooperation and sharing (low interpersonal trust and social capital)</li> <li>• Ineffective implementation of the corporate social responsibility framework</li> <li>• Persistent specialisation in commodities and low- value adding activities</li> <li>• Few and weak linkages across economic activities</li> <li>• Stop and start approach to policy making</li> <li>• Weak linkages between universities and the private sector &amp; lack of applied research on regional strategic economic sectors</li> <li>• Lack of an appropriate definition of SMEs</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Grasping the opportunities of sustainable economy (e.g sustainable agro-food production; exploiting wood potential as a recyclable, renewable and durable raw material)</li> <li>• Capitalising on youth talent and young entrepreneurs</li> <li>• Increasing local voices through the recent administrative reform of the election of the regional governor (intendente), despite the limitations of the reform itself</li> <li>• Increased investments from China and linkages with Chinese investors and consumers</li> </ul>	<ul style="list-style-type: none"> <li>• High market concentration leading to excessive market power and rents</li> <li>• Challenging conditions for medium-sized firms</li> <li>• Lack of policies addressing functional regions</li> <li>• Relatively low attention to global economic trends</li> <li>• Increased competition with China in domestic manufacturing activities</li> <li>• Growing conflict with indigenous population</li> </ul>

**Box 2.5. Moving forward: Three scenarios for the Bío-Bío region in 2030 (Cont.)**

**Scenario 1: Bío-Bío Green:** The region is able to take full advantage of its endowments (forestry, which is renewable-recycling-durable) given the rising demand for sustainable production. The regional government is increasingly autonomous in strategy and budgeting and effective mechanisms for accountability are in place between the national and regional governments. Medium-sized enterprises are successfully operating in the market and region, and produce and export increasingly sophisticated and value-added products and services. Some big enterprises are moving their headquarters to Bío-Bío. Universities and technological centres are innovating on the frontier and train people in line with the needs of industry 4.0. Global and regional connectivity is reinforced.

**Scenario 2: Bío-Bío Drained:** The human capital is drawn towards other regions. Production is limited to natural extraction and oriented towards the export of unprocessed commodities. Top quality universities leave the region, limiting the growth opportunities of local firms and entrepreneurs. Regional autonomy remains low. Climate change raises regional vulnerabilities through various channels.

**Scenario 3: Bío-Bío in Transformation:** The region is not yet autonomous but governance reforms enable local voices to be better heard in national/regional negotiations. Successful co-ordination between universities and the private sector enables some firms to upgrade their production. Universities attempt to improve their innovation capacity. Relative infrastructure modernisation and increased investment from China enable technological transfers and increase productivity.

*Source:* Collective results of the scenario-setting exercise for the region of Bío-Bío. The exercise took place in Concepción on January 11th 2017 in the context of the first fact-finding mission to Chile of the PTPR process. Participants included representatives from the regional government, CORFO, private sector, professional associations, opinion leaders and regional counsellors (COREs).

**The start-up policy has been reformed to enable innovation in regions**

One of the areas in which Chile has achieved remarkable impact is in facilitating the creation of start-ups (OECD, 2016b). In line with the national priority of fostering territorially and socially inclusive development, the policy mix for start-up promotion was modified in 2014 with the introduction of new conditions and tools to promote start-ups in regions. In fact, ensuring equal opportunities has become a priority in start-up promotion. Start-Up Chile's first assessments in 2015 had revealed the limits of a "space-blind" start-up policy. Most of the beneficiaries were located in Santiago, the capital city, meaning that opportunities were being missed to link start-up creation to existing production ecosystems outside Santiago's metropolitan area, such as the agro-food industries, mining, fishery and forestry, to name but a few. Start-ups in these regions face higher barriers in accessing finance and services. In response to the need for greater inclusiveness, Chile introduced new programmes and reformed the conditions of existing programmes:

- **Regional Pro-Entrepreneurship Programmes (PRAEs):** Introduced in 2014, the PRAEs co-finance start-ups with high growth potential and specifically those with the potential to reach growth of above 20% during the first three years. CORFO provides non-repayable contributions covering up to 75% of the total cost of the project with a maximum of CLP 25 million (USD 34 000). Applications are submitted via one of CORFO's approved sponsors.
- **The Environment Support Programme for Entrepreneurship and PAEI-Regional Innovation:** Introduced in 2015, this programme aims to create a more business-oriented culture and raise business skills in the regions. It co-finances programmes



that have a substantial regional impact and that promote entrepreneurship and innovation. CORFO subsidises up to 70% of the project costs, up to a maximum of CLP 50 million (USD 68 000).

- Start-Up Chile has opened regional offices in Valparaíso and Concepción, and in 2015 it began to offer the Go-Regional incentive, which consists of a CLP 5 million (USD 6 800) non-repayable contribution – in addition to the CLP 20 million (USD 27 500) under its Seed Programme – for start-ups to locate in regions. As of 2016, after two editions of Start-Up with this additional incentive, 23 start-ups had benefited from the Go-Regional incentive by moving into the regions: 15 in Valparaíso, 8 in Concepción.
- The Support for Operating Collaborative Workspaces for Entrepreneurship programme also has a regional focus. Created in 2005, the programme supports the opening of collaborative workspaces – co-working spaces, laboratories and accelerators – in regions with few incubators or accelerators. It covers 75% of the project costs in the form of a non-repayable capital contribution, up to a maximum of CLP 200 million (USD 145 000). The first stage of the programme focuses on turning the cities of Antofagasta, Valparaíso and Concepción into new innovation hubs. By the end of 2015, Chile had 30 collaborative workspaces for entrepreneurs in the regions. One example is the CoWork Espacio Atacama centre in Antofagasta, which was formed by a partnership between CORFO, Chrysalis and the Pontificia Universidad Católica's business incubator in Valparaíso, along with Fundación Mi Norte, Universidad Católica del Norte, and Corporación Incuba. The centre has air-conditioned rooms for meetings and spaces for training, and provides mentoring, training, legal and accounting services.

Since the instruments to support start-ups in the regions began operating as recently as 2014, it is still too early to assess their impact. However, there are signs that they are having positive results. According to information released by CORFO's Entrepreneurship Division in 2016, thanks to instruments such as co-working, the concentration of start-ups in Santiago has fallen from 75% to around 50%. Temuco, for instance, is positioning itself as a dynamic area for the creation of technology based firms.

### **The place-based approach to economic transformation is still in its infancy**

The current national agenda for economic transformation is accompanied by an explicit concern for the territorial dimension. This marks a departure from earlier industrial policy efforts, in which the regional dimension was only taken into account as a way of compensating for the agglomeration effects of industrialisation. Today, the rationale for addressing the regional dimension is broadening; compensation remains crucial for certain areas and aspects, but territories are increasingly seen as new sources of innovation and growth. At the global level, regions and cities are becoming key units for the planning and implementation of actions to support economic transformation. The city of Paris, for example, is active in promoting start-up creation, while the Italian region of Emilia Romagna has a dedicated ministry for employment, development and education. Despite its initial efforts in 2007 to create the RDAs, Chile is still at an incipient phase.

As in other countries, the role of the regions is shaped by Chile's institutional framework (Table 2.6). In Brazil and India, subnational governments enjoy a significant role in mobilising industrial and innovation policy. In China, the central government maintains strong control over local authorities by appointing them, but in practice local authorities have ample room for manoeuvre in policy planning and implementation (Xu, 2011). The role of regions in transformation strategies also changes over time. In Korea, for example, during the catching-up phase regional authorities were directly appointed by the central government and had little autonomy. From the late 1990s, the country engaged in successive reforms to strengthen the role of regions by increasing the allocation of resources to regional development (OECD, 2012).

**Table 2.6. The variety of institutional frameworks for “place-based” transformation strategies, selected economies**

Degree of planning and financing responsibilities in industrial and innovation policy of sub-national governments	National multilevel governance setting		
	Federal countries	Unitary countries	
		Elected regional authorities	Non-elected regional authorities
Significant	Brazil, Canada Germany, India Switzerland United States	Italy, Spain	China
Medium	Argentina, Malaysia Mexico The Russian Federation	Colombia, France, Netherlands, Poland, Korea	---
Limited	---	Chile, Denmark, Japan, Peru, South Africa, Turkey	Finland, Ireland, Indonesia, Morocco

Note: China, India and Indonesia have multiple relevant institutions at different sub-national government levels with responsibilities for industrial, scientific and technological development with non-elected authorities. Significant responsibility in industry and innovation does not imply better performance, or a judgement of value; it refers to a different organisation and it implies different policy options. The degree of devolution of competences in innovation-related matters is subject to change. Information reported in this table refers to the first semester of 2010 for OECD countries, and to the second semester of 2011 for non-OECD economies.

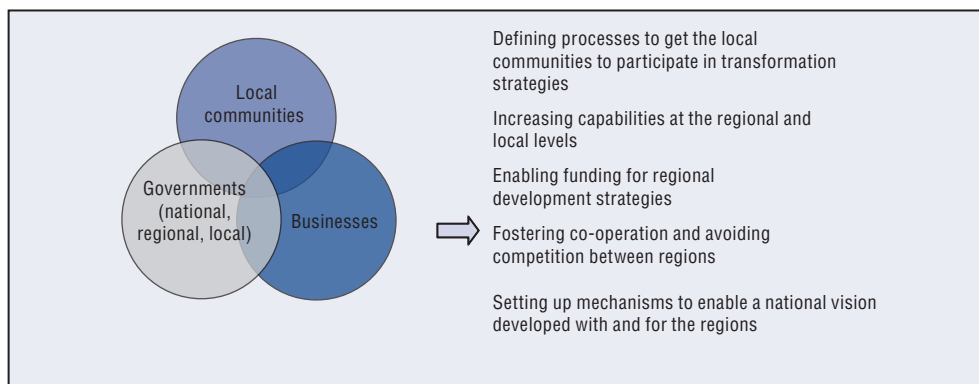
Source: OECD (2013), Perspectives on Global Development 2013: Industrial Policies in a Changing World, [http://dx.doi.org/10.1787/persp\\_glob\\_dev-2013-en](http://dx.doi.org/10.1787/persp_glob_dev-2013-en). Draws on and updates OECD (2011), Regions and Innovation Policy, <http://dx.doi.org/10.1787/9789264097803-en>; and OECD (2012), Industrial Policy and Territorial Development: Lessons from Korea, <http://dx.doi.org/10.1787/9789264173897-en>.

Economic transformation never happens in a balanced way within countries. But successful economies tend to put in place mechanisms to ensure that territories' potential is enhanced by national strategies and that excessive disparities within nations are avoided. Often, growth, investment and innovation take place in specific locations within countries, while most of the territories tend to lag behind. If not counterbalanced by “place-based” policies, this trend may create social tensions and undermine potential future growth by neglecting new sources of growth and contributing to decreasing returns in large-urban agglomerations. Some countries are backing up national transformation strategies with regional policies. Regional actors, if empowered with responsibilities and resources, can be powerful allies in implementing policies for industrial development.

To increase the voice of regions in strategy setting, highly centralised countries need to change their way of functioning. Effective transformation strategies require governance mechanisms that take into account territorial perspectives. This goes beyond territorial planning, to view the territory and local communities as repositories of the knowledge, know-how and capabilities that help to define the uniqueness and the competitive advantage of nations. The government needs to learn how to work with its territories, its constituencies and its population to reveal their priorities and identify a shared vision for the future (Figure 2.17). This means creating effective spaces for dialogue with regional stakeholders and accepting that these processes do not happen overnight – they require time and continuous effort. Regional development policy debate is shifting to a new paradigm: initially it was focused on the equalisation of regions. In the 1990s/2000s the emphasis was on the competitiveness of regions. Today, the debate in the OECD is shifting towards a more comprehensive approach that takes into account the overall wellbeing of citizens (OECD, 2016a). This requires recognising and taking into account the specific needs of low-density regional ecosystems.



Figure 2.17. Enabling territories to be agents of change



Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

The international experience offers lessons and good practices for economic transformation and regional development:

- **Production transformation strategies need to take territorial perspectives into account as a starting point, regardless of the level of centralisation of the country.** For example, Slovenia is a fairly centralised country, yet it has developed a system to involve and work with regional stakeholders to foster competitiveness and industrial development. A key dimension is creating the right environment for business development. In Slovenia, for example, regions are central actors in the promotion of interactions and co-operation among firms and the technological system, including incubators, accelerators, technology transfer offices, and creative economy centres.
- **Avoid focusing on innovation only:** everything needs to be provided at the same time. Competitive territories offer dense and trust-rich environments in which education, standards and norms, infrastructure, financing and services are available. In the 2000s, there had been too much emphasis on solely promoting innovation and/or human capital, while successful experiences show the need for a more comprehensive approach. In particular, it is important to create spaces for aligning norms, infrastructure and services to the priorities of the strategy. This is a systematic effort that requires trust and social capital across the whole production and innovation system. For example, in promoting smart specialisation in Emilia Romagna (an already substantially developed and industrialised region of Italy), incentives for R&D, support to entrepreneurship, efforts to attract FDI, training, and export promotion are all coordinated under a vision of the region and for the region. The policy mix is included in a seven-year framework and endowed with an initial public investment of USD 700 million, complemented by private funds for investments up to at least 50% of the initial public investment.
- **Redefining the “regions”.** On the one hand, it is important to look beyond administrative borders to identify economic and functional regions. This can avoid duplicating efforts and can increase impact. Often, a production and innovation ecosystem spans administrative boundaries; transformation strategies need to take economic, social and geographical realities into account. This is particularly relevant for tradable activities for which the value chain often passes through several regions. Another issue is to refine the definition of rural areas. The OECD is already exploring better ways to define rural areas through criteria such as remoteness and/or proximity to given economic and functional regions.

- **Implementing effective mechanisms for resource transfers.** Setting up mechanisms for resource transfers and checks and balances between the national government and the regions through contract plans will avoid duplicated effort and wasted resources.

The EU's smart specialisation strategy is one of the most relevant and recent experimental efforts for enabling diversification and industrial development. The strategy rests on the principle that territories are repositories of knowledge and know-how. It has mobilised EUR 65 billion to enable the definition and implementation of regional specialisation strategies in EU regions, fostering dialogue and knowledge-sharing among actors in local production and innovation systems. The strategy enables actions from a bottom-up perspective at the regional, national and EU levels, with a view to identifying needs and opportunities, and to then provide support in the form of financing, services and infrastructure at the most appropriate level (Box 2.6).

#### Box 2.6. Place-based transformation policies: lessons from the EU smart specialisation strategy

While it is too soon for a comprehensive impact assessment of the EU Smart Specialisation strategy, four key success factors can be identified:

- **Triggering the interest of regions to participate.** The interest of regions in these policy changes cannot be taken for granted. Some systems might simply want to preserve their current position or resist change. In addition, not all regions will be proactive in the same way, so investment is needed to explain the strategy and clarify the potential benefits.
- **Shifting the focus from document development to action.** A key element of the EU approach is to enable a constructive dialogue among businesses, the government, academia and civil society. The regions that have managed to implement this approach effectively did so not in a bureaucratic way, but by identifying actions that could trigger change in the region. The development of the regional strategy document was considered as a means, not an end.
- **Taking history into account.** Within and between countries, regions differ greatly in terms of their institutional setting, history and culture. The EU strategy needs to value and recognise these differences if it is to be effective. Some regions focus on strengthening their historical richness, while others used the smart specialisation to reinvent themselves in light of potential future opportunities.
- **Achieving strong political commitment.** A capable and determined public administration is needed to translate interactions among businesses, academia and civil society into actionable strategies and policy tools.

Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

To advance in a place-based approach in production transformation, Chile will need to (Table 2.7):

- Advance in its decentralisation process by finding the approach that best suits its historical and overall institutional arrangement.
- Set up mechanisms for resource transfers and define contract plans between the central government and the regions. These are essential components of the effective implementation of Chile's decentralisation strategy.
- Explore meso-regional approaches in strategy setting and implementation, and take into account the specific needs of remote and low populated areas.
- Explore international cross-regional co-operation. This will also be important for certain production ecosystems, especially in the north and in the south of the country.

**Table 2.7. Increasing the “place-based” approach in Chilean policies: priorities and challenges**

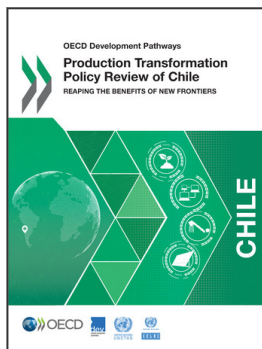
<b>Priorities</b>
<ul style="list-style-type: none"> <li>• Advance in the decentralisation of industrial and territorial policies by enabling effective regional autonomy and intensifying the dialogue with local actors.</li> <li>• Create mechanisms for identifying local priorities based on territorial assets and visions and to create spaces for allowing these priorities to be part of the process of priority setting at the national level.</li> <li>• Identify mechanisms to implement actions that go beyond each region's strengths and that exploit the synergies and complementarities among regions.</li> <li>• Shift from experimentation to effective and well-funded regional strategies, with clear strategic objectives and good governance and support.</li> </ul>
<b>Current challenges</b>
<ul style="list-style-type: none"> <li>• Increasing the involvement of the local community in national territorial planning and economic diversification strategies.</li> <li>• The centralised tax collection system, which hinders the fiscal capacity of municipalities and limits possibilities to create more diversified local economies.</li> <li>• The mechanisms to support lagging/less developed regions, which would benefit from revisions.</li> <li>• The concentration of political and economic powers in the capital city, which might translate into diseconomies of scale and mega-urbanisation challenges for Santiago, and in growing social tensions and underutilisation of the growth potential in other areas of the country.</li> <li>• Weak capacity at the regional and local level, which hinder the capacity of the state to act as an effective planner and implementer.</li> </ul>

Source: OECD (2017), Key Outcomes of the Peer Learning Group (PLG) Meeting of the PTPR of Chile, hosted by the OECD in Paris, May 2017.

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