

## Italy: Trentino's turnaround 1980-2020

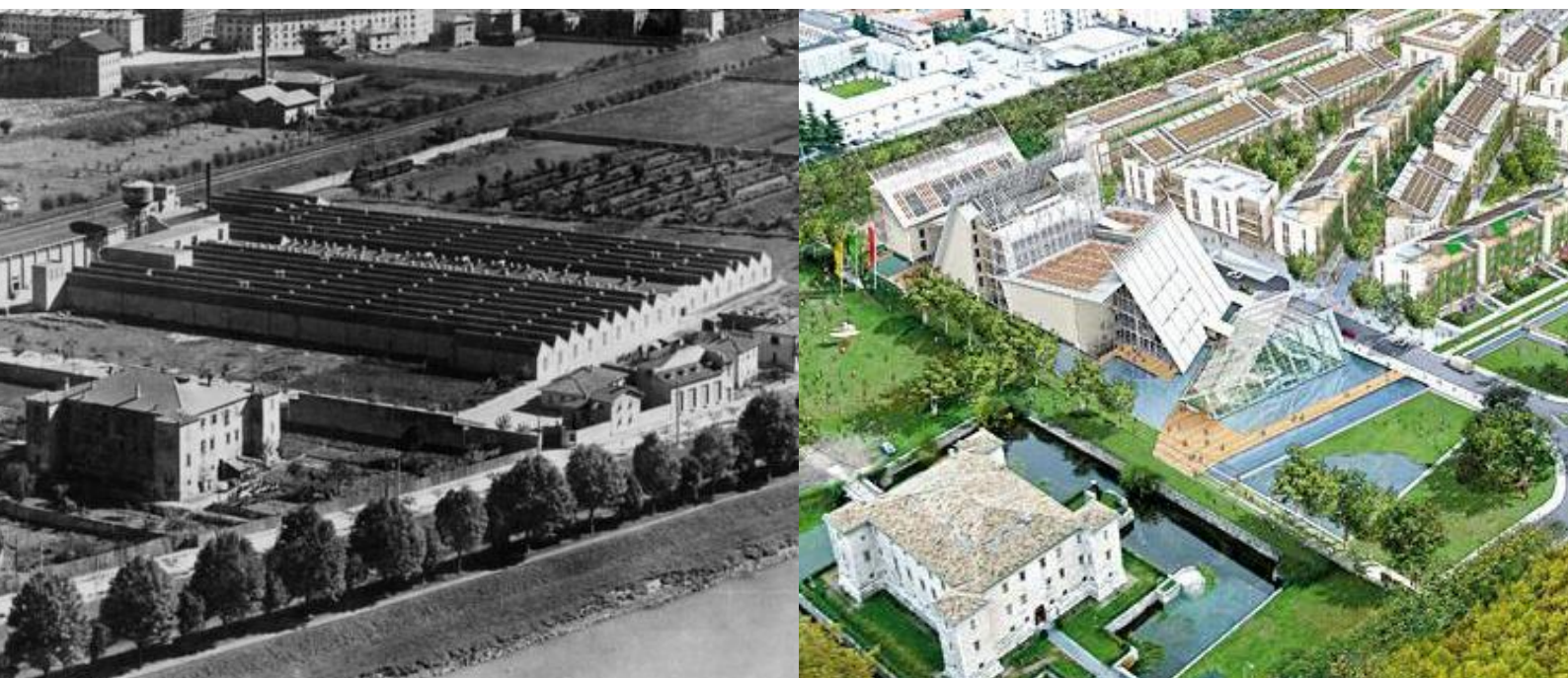


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*This document relies on a combination of quantitative and qualitative sources. The qualitative sources consist of in-depth interviews conducted with local experts on institutional, economic, and social issues, as well as conferences and documentaries related to the commemoration of the 50th anniversary of the Statute of Provincial Autonomy in 2022. Additionally, various online sources, including scientific and journalistic publications, were consulted.*

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# Trentino's turnaround 1980-2020

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Trentino is a mountainous province situated in the northern part of Italy with approximately 500 000 inhabitants. In 40 years, Trentino transitioned from a region with large employment shares in agriculture and manufacturing to a knowledge-intensive economy and high value-added agriculture. Following the 1970s global recessions, the prospect of mass lay-offs among the major local manufacturers prompted innovative active labour market policies, leveraging the province's newly acquired delegated policy making powers. Trentino has succeeded in sustaining a high employment rate, increasing female labour market participation, maintaining high and growing employment and GDP, and preventing population decline. However, productivity growth has slowed remarkably since 2000, pointing to the need to revisit strategies of economic development for the next 40 years.

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## Where the province was and where it is now?

**Trentino is a mountainous province situated in the northern part of Italy with approximately 500 000 inhabitants.** Located in the southern Alps, it is bordered by South Tyrol to the north, the Veneto region to the east, Lombardy region to the west (Figure 1). The Adige River valley provides both terraced vineyards and the main areas for the economic activity concentrated around Trento, the provincial capital, and Rovereto. The valley also functions as one the main European transport arteries from Verona in the south to Munich in Germany via the Brenner pass and Innsbruck in Austria. The economic activities in other valleys in the region are dominated by agriculture and tourism. Trentino has been a popular destination for tourists for decades, with nearly 3 million arrivals and over 11.5 million certified stays in 2022 alone, surpassing the pre-pandemic record set in 2019.

Figure 1. Trentino's location in the northern part of Italy

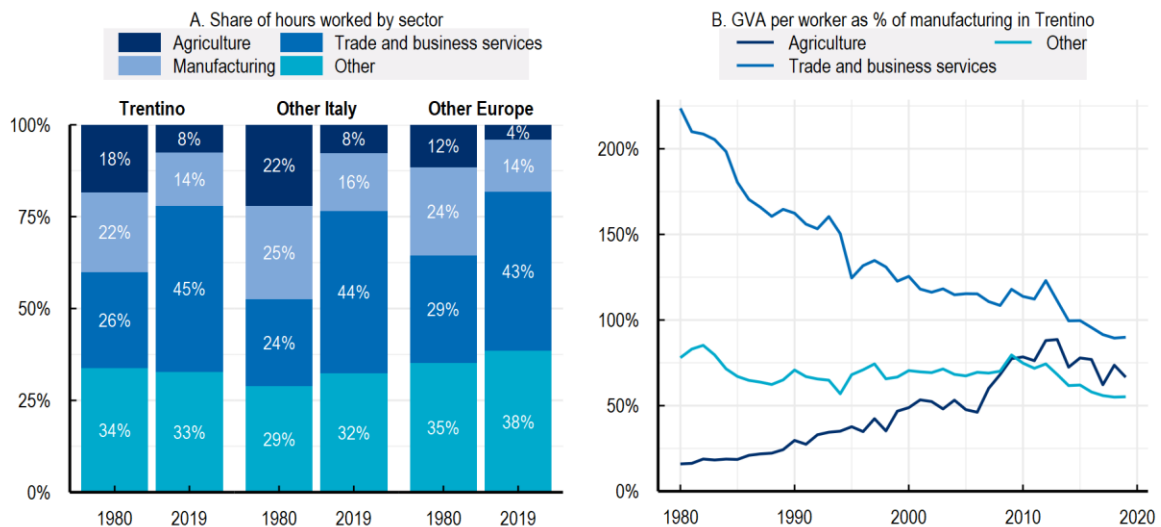


Source: OECD

**In 40 years, Trentino transitioned from a region with large employment shares in agriculture and manufacturing to a region that invested heavily in building a knowledge-intensive economy and high value-added agriculture.** Many regions in Europe have experienced declining employment shares in manufacturing and agriculture since the 1980s. What makes Trentino's experience unique is that it was successful in executing a long-term transition towards economic activities with higher value added through stimulation of research, innovation and knowledge creation. While a knowledge-intensive economy is typically characterised by business and professional services sectors and specialised manufacturing, in Trentino also agriculture, specifically its wine production and apples agriculture, has successfully built on this.

**Agriculture and manufacturing accounted for 40% of all hours worked in the region in 1980, falling to 22% in 2019.** In the 1970s, subsistence farming, the predominant feature of the agricultural landscape for centuries, started shifting towards a focus on higher value crops, while still serving as a supplementary income source for an expanding blue-collar workforce. In that period, the industrial environment became increasingly diversified, including prominent manufacturers of rubber and tobacco products, electronics, glass and ceramic materials, alongside leading companies in construction and energy (see [Box 1](#)). In 2019, the combined employment has dropped to 22%. Agriculture is dominated by wine and apples, Trentino being a renowned leader in the production of high-quality and specialty apple varieties. Where agricultural productivity per worker was below the Italian average in 1980, currently Trentino agricultural productivity per worker is 50% above the Italy average. But few people work in these sectors: 45% of hours worked in the region are accounted for by trade sectors, accommodation and restaurants, and financial and business services, up from 26% in 1980 (see [Figure 2](#)), as part of a process of servitisation propelled by tourism. Since the 1960s, the region has been able to capitalise on the growing demand for summer and winter tourism by developing its infrastructure and promoting its ski resorts, resulting in a considerable expansion of employment in this sector, which is still ongoing.

**Figure 2. Agriculture and manufacturing accounted for 40% of all hours worked in the region in 1980, falling to 22% in 2019**

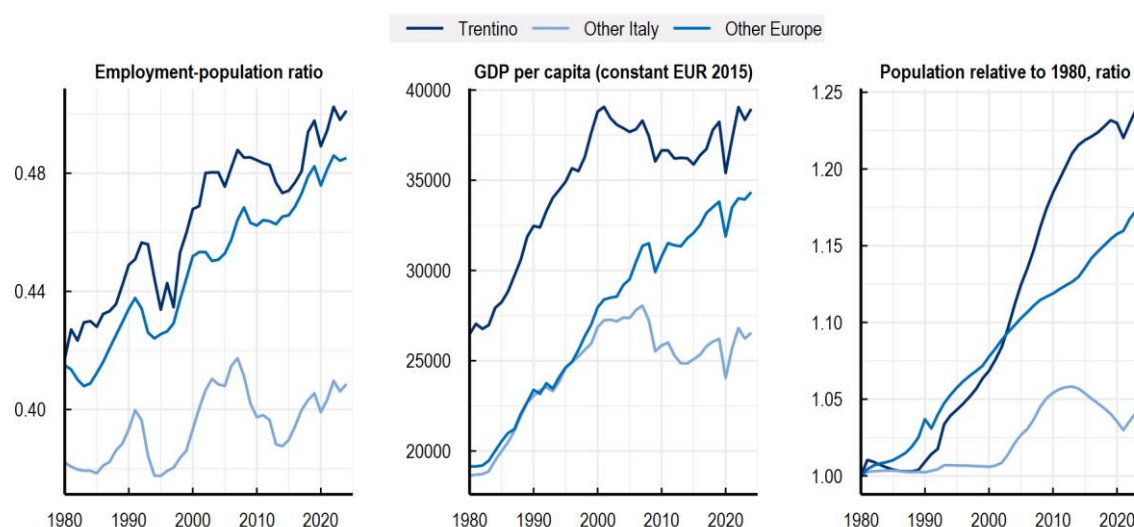


Note: Calculations based on NUTS2 level information. Sector differentiation based on available data. "Agriculture" includes also hunting, forestry and fishing. "Manufacturing" includes also Mining and quarrying (B), and electricity, gas and water supply (D-E). "Trade and business services" includes Wholesale and retail trade and repair (G), Transportation and storage (H), Accommodation and food services (I), Information and communication (J), Financial and insurance (K) Real estate (L), Professional, scientific and technical activities (M) and administrative and support services (N). "Other" includes all remaining sectors, which are Construction (F) and community, social and personal services (O-U). Other EU includes regions for which information is available from 1980 onwards. This figure uses shares of hours worked instead of employment, since the shift in agriculture is characterised by both a reduction in employment and a change in seasonality of employment, which is better captured through total hours worked over a year.

Source: OECD calculations based on ARDECO.

**During the turnaround, Trentino managed to keep employment rates high, GDP growing, prevented population decline, and kept its regional productivity growing.** Turnarounds can imply a fundamental change in labour demand as skills needed in the economy change over time. When manufacturing plants close in the transition away from manufacturing, mass lay-offs across plants may cause a strain on local economy and public services. The turnaround in Trentino is characterised by increasing employment rates, growth in GDP per capita and a growing population (see Figure 3). The latter is particularly noteworthy, given that many Alpine regions have experienced declining demographics in recent decades due to low birth rates and younger groups migrating to urban areas in search of better economic opportunities. This raises the question of what structural and policy factors have helped to transition in an inclusive way.

**Figure 3. During the turnaround, Trentino managed to keep employment rates high, GDP growing, prevented population decline, and kept its regional productivity growing**



Note: Calculations based on NUTS3 level information. Other EU includes regions for which information is available from 1980 onwards.  
Source: OECD calculations based on ARDECO.

**Trentino's successful economic transition can be attributed to multiple structural factors.** Among these, the most prominent are the province's administrative autonomy, which was first codified in the 1970s and subsequently expanded; its relatively advanced levels of educational attainment, a legacy of Trentino's history as part of the highly developed Austria-Hungary until 1918, which was further bolstered by the set-up of a university in the 1960s; and above-average social capital, as shown by the significant role played by co-operatives and other social economy players in the region's employment landscape. These structural features facilitated effective public policy during the transition, enabling workers to adapt to new job opportunities. Moreover, the combination of these local characteristics and provincial policy has created a solid foundation for the development of a knowledge-intensive regional economy.

## The path between

**In 1980 Trentino was well-off relative to other Italian regions.** It had a thriving manufacturing sector, partially due the high literacy rates and advanced educational attainment of its population in comparison to other Italian regions. Institutionally, the Region of Trentino-Alto Adige/Südtirol had enjoyed autonomous status since 1946, which allowed the public sector to play a crucial role in promoting industrialisation. This autonomy had expanded and further delegated from the regional to the provincial level since 1972, with the approval of a new statute. This new institutional setting granted the province the ability to manage its economic and social policies. A significant portion of the national taxes raised in the province is retained, providing the financial means for proactive provincial policy initiatives.

**The 1980s brought significant challenges to Trentino's economy, particularly to its manufacturing sector.** Many local factories experienced a rapid decline and closures, resulting in major job losses. The region was faced with a challenging national economic environment, characterised by high inflation and interest rates, as well as a strong Italian lira, which made exports more expensive.

### Box 1. The rise, fall and (tech-driven) rebirth of manufacturing in Trentino: the key role of the public sector

**Efforts to promote industrialisation have undergone different waves throughout the history of Trentino.** The earliest examples date back to the 19<sup>th</sup> century when Manifattura Tabacchi, a public monopolist in tobacco production under Austria-Hungary, started a plant in Rovereto in 1854. After World War I, when Trentino became part of Italy, major national manufacturers started plants there as part of a plan by central government to promote the region's closer integration into the country's economic and social fabric. Pirelli and Michelin, major tyre manufacturers, started plants in Rovereto and Trento in 1926 and 1927, respectively. Società Trentina Elettro Meccanica (STEM) was established with public support in 1921. La Sportiva, a footwear brand, was founded by a local entrepreneur in 1928 and experienced rapid growth in its early years.

**After gaining autonomous status in 1948, the region continued to implement industrial policies aimed at attracting large manufacturers.** For example, a Refradige plant was built in Trentino in 1960 by Montecatini, an important Italian chemicals group back then. Laverda, founded in neighbouring Veneto, opened a factory for caravan production in Trento in 1963. Grundig, a German maker of TVs, started operations in Rovereto in 1965. The production facility of Ignis, back then a major national manufacturer of home appliances founded in neighbouring Lombardy, was built in the northern outskirts of Trento, in 1969. Local entrepreneurship also played a role, as shown by the case of Marangoni, a major tyre manufacturer founded by a craftsman from the area in 1945 in Rovereto.

**Most of these companies reached their highest levels of employment during the 1970s.** Grundig, Manifattura Tabacchi and Michelin, for example, had over 1 000, 1 200 and 1 700 workers respectively during this period. This trend coincided with an increase in unionisation, as part of a broader expansion of civil and social rights in Italy during that time.

**The aftermath of the global recessions in the mid-1970s and early 1980s, as well as intensified global competition, hit Trentino's firms hard.** Many factories, such as Pirelli (1982), Grundig (1985) and Laverda (1987), had to close shop. In some cases, environmental harm exacerbated this process, such as with Sametec, part of the ENI Group (a national leader in energy), whose plant in Mezzocorona was built in the 1960s and had to shut down in the mid-1980s. Other companies were taken over by foreign entities, such as the acquisition of Refradige by Saint-Gobain, a French multinational, in 1971, and of Ignis by Whirlpool, a US multinational, in 1988. Some companies entered a long period of fading out, like Michelin and Manifattura Tabacchi, which ceased operations in 1999 and 2008, respectively.

**During this phase, the public sector once again played a crucial role.** Avoiding mass lay-offs and promoting re-employment of dismissed people was the focus in the 1980s, with the establishment of the Provincial Labour Agency and the enactment of innovative active labour market policies.

**Supporting the reconversion of closed plants into tech and business hubs gained momentum in the 2000s.** After shutting down in 2008, Manifattura Tabacchi's plants were transformed by Trentino Sviluppo, the province's main development agency, into a start-up incubator specialised in sustainable manufacturing in 2010. Progetto Manifattura, as this tech hub is currently known, hosts over 50 tech startups and SMEs. A similar operation was conducted in Pirelli's plant, which, as of 2011, hosts Polo della Meccatronica, a hub for firms in mechatronics. Thus, the province leverages the talent bred at the faculties of natural sciences and engineering at the University of Trento. In 2013, a cutting-edge science museum (MUSE, which hosted 400 000 visitors in 2021) and a university campus were built, driven by sizeable provincial investment, where Michelin plants once stood. After Whirlpool's acquisition of Ignis, its production facility continued to be in troubled waters and was closed in 2014, leaving 470 people unemployed. However, through the incentive schemes provided by the province, the plant was

reactivated by Vetri Speciali, a glassmaker, in 2017. Local manufacturers such as Borz (professional kitchens), Mariani (machinery manufacturing) and Fralog (logistics) now occupy the former Grundig manufacturing facilities because of provincial efforts in reindustrialisation.

**Through a sensible combination of public and private efforts, Trentino remains home to a highly diversified entrepreneurial landscape.** Multiple international companies still operate in the area, as exemplified by Siemens, which acquired STEM in 2005 and has produced energy transformers ever since, and Saint-Gobain, with its 150 employees. Several entrepreneurial activities that started decades ago have produced global champions. For instance, Marangoni, which maintains its production plant in Rovereto, has considerably expanded its operations worldwide. La Sportiva, which employs over 400 workers, mainly in its production facility in Fiemme Valley, distributes its footwear in 70 countries across the globe. A vibrant innovation ecosystem earned Trentino the name of 'Italian Start-up Valley'.

**New statutory provisions in 1972 granted the provincial government a high degree of autonomy, enabling it to tackle industrial crises through experimental solutions.** One major policy innovation was the introduction of company-level bargaining, which ensured greater adaptation to local circumstances and needs as compared to national collective bargaining. Furthermore, the province gained the power to intervene in industrial policy matters with tools that were previously reserved for the national government, including direct financing and other incentives for companies.

**Autonomy prompted closer collaboration between the provincial government, business and labour unions in economic and labour matters.** Initially, they focused on employment protection and industrial policy. For example, they agreed on the creation of an experimental job protection agreement that provided extra financial support to workers who were laid off by small companies; they set up a tripartite employment commission to propose labour policy initiatives to the Provincial Council; and they established an industrial development plan that helped Trentino to weather the industrial transition. Subsequently, the focus shifted to welfare, with the goal of improving workers' conditions. Major successes include the introduction, well ahead the rest of Italy, of maternity protection, a pension for stay-at-home parents, and a complementary pension fund for employees of local employers. In addition, a provincial credit consortium for industrial companies was expanded to cover national redundancy payments, which helped to reduce disbursement times. This tripartite collaboration was also the basis for the Employment Agency of the Province of Trento, which was established in 1983. The agency, which is managed by a board of directors that includes labour unions and employer organisations, implements active labour market policies on behalf of the provincial government. One of the first cases it had to deal with was the closing of Grundig's Rovereto factory in 1985 that affected hundreds of workers.

**The employment agency worked with all stakeholders to find a solution for affected manufacturing workers.** The factory was transferred under provincial control. Workers were divided into three groups, i.e. technicians and specialised workers who were easily re-employable, those who could be retrained with public support, and low-skilled or older workers who required more focused attention. The *Progettone* was created to hire low-skilled, dismissed workers for socially useful work and provide them with employment until retirement. Projects are identified through mechanisms of consultation and include the maintenance of mountain roads, public parks and water streams. This marked the start of an active involvement of the agency in helping workers to transition to new jobs during periods of unemployment. From 1990, when *Progettone* was enshrined in provincial legislation, to 2015, approximately 8 000 unemployed workers were assisted, with 3 500 of them being guided into retirement.

**The blend of industrial, labour and welfare policies enacted in that period may have contributed to maintaining resilient employment rates over economic cycles.** Tourism promotion policies also played a significant role in keeping employment levels high when local manufacturers faced crises. The government collaborated with the private sector to invest in ski resorts, transportation infrastructure, and establish a tourism agency, all while heavily promoting the region to tourists. As a result, Trentino became

a leading European tourist destination, attracting millions of visitors annually and generating substantial economic benefits, including job creation. The unemployment rate for workers aged 25-74 in Trentino peaked at 5.7%, relative to 8.7% in Italy in the 1990s (see Figure 4). In 2015, after the fall-out of the global financial crisis, Trentino was again at 5.7%, while Italy's unemployment rate stood above 10%.

**The growth of female participation rates in Trentino far exceeds that of the Italian average.** Female participation rates in Trentino have diverged from the Italian average over the period observed. In 1980, participation for females aged 25-65 stood around 35% in Italy and Trentino. By 2015, the rate in Trentino increased to 68%, whereas in Italy it had only increased to 52%, creating a gap of 16 percentage points. Moreover, in 1980, employment rates for men aged 25-64 were above 85% in Italy and Trentino. By 2015, these rates had declined to 75% in Italy, but remain above 80% in Trentino. The larger increase in female participation and lower decline of male participation explains the growing and diverging employment-to-population rates presented in Figure 3.

**The province has used its autonomy to support the growth of knowledge-intensive sectors.** In the 1960s, the Autonomous Province of Trento established the *Istituto Trentino di Cultura* (ITC) to lay the foundation for a university and research system. In 1972, this led to the creation of the University of Trento, which includes faculties of physics, natural sciences, economics, law, among others. Alongside it, the ITC established scientific research centres, including the Bruno Kessler Foundation (known as FBK), which conducts research in information technology, microchips, artificial intelligence and robotics. Consequently, R&D in Trentino is mainly driven by the public sector, with a ratio of 3 to 2 compared to the private sector (in contrast to Italy as a whole, where the opposite ratio applies). Since the late 1990s, the growth of the number of patent applications per million inhabitants, a measure of research intensity, has outpaced that of the median Italian and European regions. From 2010 to 2015 (the last year of the database), the number of patents per million inhabitants has been higher than the median Italian and European regions (see Figure 4).

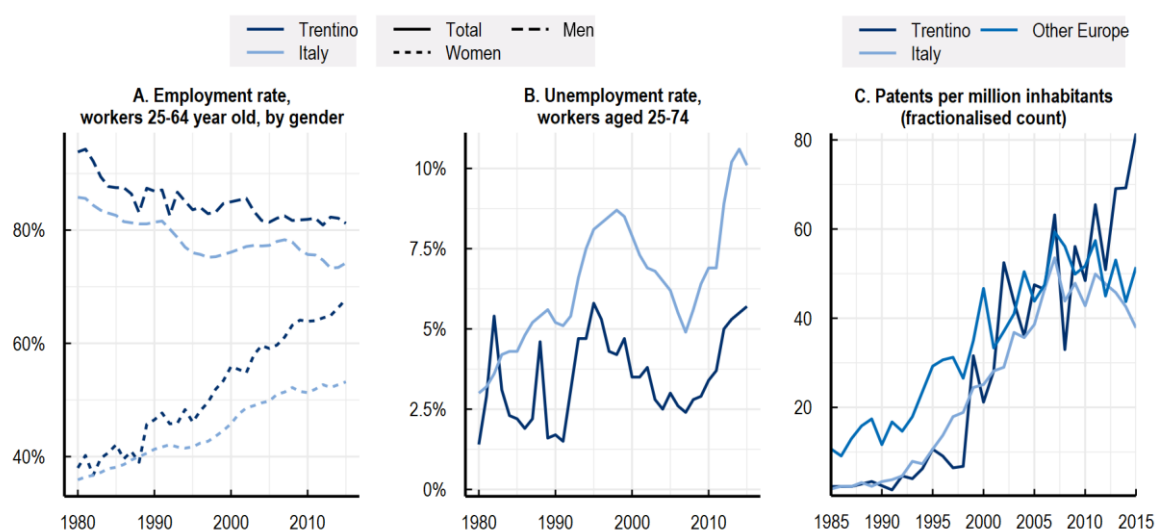
**Since 2000, Trentino has cemented its reputation as a region that places a premium on knowledge-based development, with a strategic focus on creating a variety of institutions that each have a unique purpose.** The Trentino School of Management was established in 2001 to promote innovation in the local public sector. The same year saw the establishment of FBK, which raised Trentino's profile in the technology sectors. In 2002 and 2003, the School of International Studies and the OECD Trento Centre for Local Development respectively were created to tap into global knowledge flows on local development. The Trentino Sviluppo, established in 2007, aims to promote regional economic and social development in the region. In 2006, the International Development Co-operation Centre was established, followed by Euricse in 2008, a research centre dedicated to co-operatives, capitalising on Trentino's specialisation in these sectors. The creation of the Edmund Mach Foundation in 2008 represented a significant milestone in the development of Trentino's agricultural sector. Trento Rise, a technology transfer centre established in 2011, now known as Hub Innovazione Trentino, and Proton Therapy Trento, a cancer treatment centre that was created in 2014, are the most recent additions to the region's knowledge-based institutions. These institutions demonstrate Trentino's commitment to remaining at the forefront of innovation.

**The province aims to integrate its support for scientific research and entrepreneurship.** In the past few decades, it has repurposed various obsolete industrial plants into business incubators and science parks to foster the growth of innovative start-ups and spin-offs from its research institutions. Since 2021, Trentino has articulated its Smart Specialisation Strategy, leveraging its natural environment and specific strengths in engineering and electronics technology, to create synergies between public research institutes and private sector innovation. This strategy has earned wide recognition, with Trentino boasting the highest concentration of innovative start-ups among Italian regions. Recent OECD data indicates that start-ups in Trentino are more likely to adopt emerging digital technologies, suggesting greater innovative potential relative to counterparts in other regions. Additionally, Trentino's significant secondary cluster in Rovereto, a peri-urban area, speaks to an equitable spatial distribution of start-ups and economic development.



**Agriculture in Trentino has evolved into a high value-added sector, support by a dedicated science centre and a robust co-operative structure.** Over the past 40 years, output per worker in agriculture has surged by 600%, from approximately EUR 10 000 in 1980 to about EUR 60 000 in 2020 (in constant 2015 EUR). Notably, the value per worker has grown from 20% of that of a worker in manufacturing to 75%, exceeding the value per worker in service sectors such as trade, transport, and accommodation services (refer to Figure 2). This growth can mainly be attributed to the improvement of production quality rather than quantity.<sup>1</sup> The Edmund Mach Foundation, a publicly supported research centre, is responsible for conducting scientific research in biotechnology, including the development of new fruit varieties, innovative irrigation techniques as well as environmentally sustainable crop protectants. Additionally, the foundation provides training to local farmers. The precursor to the Edmund Mach Foundation, the *Istituto Agrario di San Michele all'Adige*, was established in 1870 and has expanded its activities under the impulse of the provincial administration since the 1960s, as part of broader support to tertiary education and innovation in the region. On the other hand, the agricultural sector in Trentino is dominated by co-operatives. These are often organised in consortia to leverage on economies of scale in providing quality control on products, managing marketing and guiding labour standards for seasonal workers. The prevalence of co-operatives in agriculture, as well as in other economic sectors, indicates high levels of social capital among the regional population. Indeed, reciprocity, civic engagement, and solidarity are constituent components of Trentino's society, as evidenced, amongst other, by record-high voter turnout, strong engagement in international development co-operation and high safety levels.

**Figure 4. Employment rates by gender, unemployment rate, and patent activity**



Notes: Panel C. Median European region calculated for each year, based on regions for which data is available from 1990 or earlier.

Source: OECD calculations based ISTAT historic series, Table 10.7 (Panels A and B), and ARDECO and OECD Regional Statistics on Regional Innovation (Panel C).

## How will the next 40 years look like?

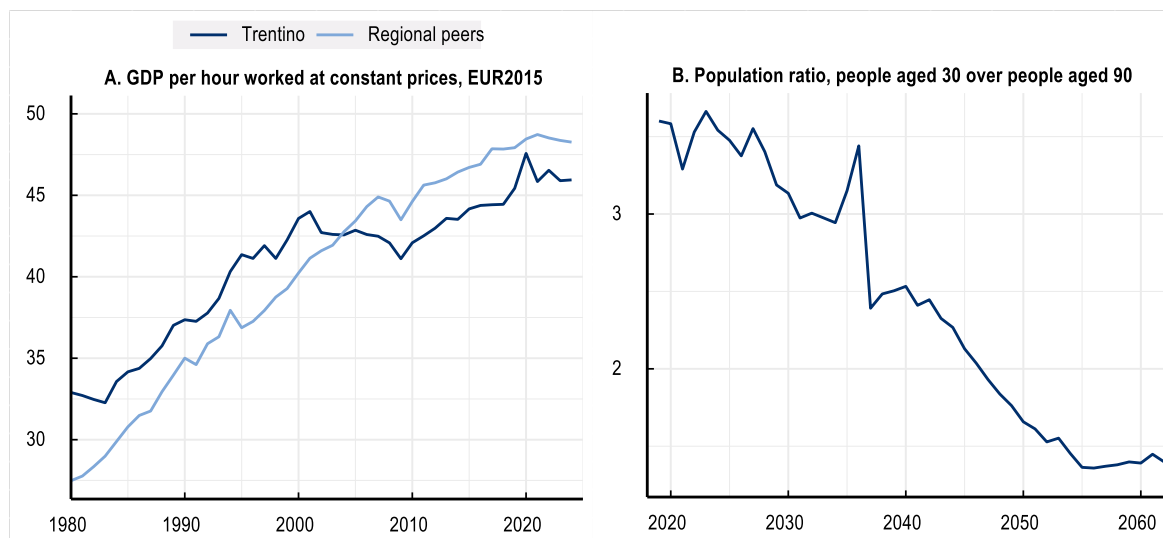
**Trentino faces ongoing and new challenges on the economic, social, and environmental fronts.**

The question of whether traditional solutions are still viable, in need of adaptation, or require replacement with innovative approaches remains a subject of intense debate. The next forty years may require

<sup>1</sup> In the past 20 years, the volume of grape and apple production has been stable. ISPAT, Table 11.07, production of principal agricultural produce (1995-2021).

innovative policy solutions to address stagnant productivity growth, a rapidly aging population and adapt to a changing climate.

**Figure 5. Productivity has fallen behind peers, while the population will age over the next 40 years**

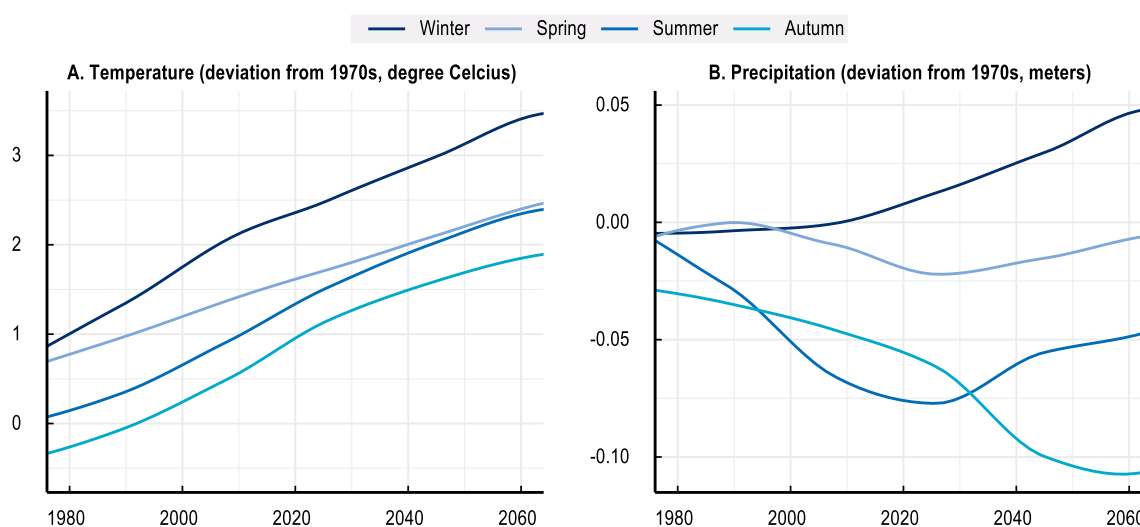


Note: Panel A. Regional peers is an unweighted average of Alpine TL2 regions in France, Italy, Switzerland, Austria, and Slovenia, including 22 regions until 1993, and 32 regions from 1994 onwards.

Source: OECD calculations based on ARDECO (Panel A) and Eurostat table PROJ\_19RP3 (Panel B).

1. **Stagnant productivity growth** poses a major threat to hard-earned income and welfare gains achieved in recent decades. Growth in output per hour worked stagnated from 2000 to 2010 (Figure 5 Panel A). At the same time, regional peers have overtaken the productivity level of Trentino around 2000, leading to a structural gap of around EUR 5 per hour worked, approximately 10% of the productivity level of Trentino. The stagnation of productivity growth can be related to a slowdown in the productivity of the trade and business services sectors, which have seen a growing share of employment (see Figure 2). Although renewed growth has been observed since 2015, productivity growth remains a challenge for Trentino's economy, which is increasingly based on both low- and high-knowledge-intensive services.
2. **A rapidly ageing population will increase the dependency ratio for elderly.** For instance, the number of people aged 30 for each person aged 90 is expected to drop from 3.5 today to below 2.5 in 2055 (Figure 5 Panel B). This fall may put intense pressure on health and social care services for the elderly. The fall is driven by rising life expectancy among the elderly and stagnant or decreasing number of the younger populations. Younger population have fertility rates, tend to emigration other regions for economic opportunities and while few new residents are attracted from other regions or countries.

**Figure 6. Trentino will experience higher temperatures and changing patterns of precipitation across seasons**



Note: Deviations within Trentino from the average observed temperatures (Panel A) and precipitation (Panel B) during the 1970s. The plotted lines are smoothed for clarity. The underlying data are based on NUTS2 level forecasts based on scenario RCP 4.5, Regional climate model HIRHAM5 (DMI, Denmark), Global climate model EC-EARTH (ICHEC, Ireland).

Source: OECD calculations based on Copernicus Climate Change Service (2021): Climate and energy indicators for Europe from 2005 to 2100 derived from climate projections. Copernicus Climate Change Service (C3S) Climate Data Store (CDS). DOI: 10.24381/cds.f6951a62

- 3. Climate change will affect crucial economic sectors that depend on the natural environment.** Over the next 40 years, temperatures are expected to rise by another degree Celsius on top of the increase already experienced over the past 40 years. The temperature rise is strongest in Winter and summer seasons, amounting to 2.5 degrees since 1970 levels (Figure 6 Panel A). Precipitation is expected to change as well, rising during the winter months, but falling during autumn (Figure 6 Panel B). The changing climate may affect tourism and agriculture, for instance due to shorter winter ski seasons, reduced ski areas and water scarcity for farming due to decreased snowfall and rainfall.

**The Autonomous Province of Trento established a consultative productivity board in 2023.** The board's mandate is to investigate local productivity and competitiveness trends, develop evidence-based policy options, promote multi-stakeholder dialogue, and raise public awareness of the matter. Trentino is at a crossroads in determining the best policy mix to address its productivity challenges. While pursuing growth in knowledge-intensive sectors has yielded limited success in job creation and growth, tourism development has not translated into increased productivity and is vulnerable to climate change and labour shortages. Despite a persistent emphasis on promoting collaboration between research institutions and industry, tangible outcomes remain elusive. It is essential to think strategically to tackle the economic, social and environmental challenges of the coming decades.