

The Economic Contribution of the IPR Intensive Industries in Argentina



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1. Executive summary

1.1. Main findings

- There are 180 IPR-intensive industries in the Argentine economy. 57% of industries is intensive in more than one IPR.
- IPR-intensive industries accounted for 45.2% of formal employment in Argentina during the 2014-2019 period. On average, IPR-intensive industries employed 2,942,5129 people directly per year.
- During the same period, IPR-intensive industries contributed with 41.9% of GDP, worth AR\$ 4,527,974 million. In terms of international trade flows in goods, these industries represented 56.4% of exports and 81.0% of imports, generating a trade deficit of about US\$ 16,106 million.
- Wages in most IPR-intensive industries were higher than in other industries. The average wage premium of IPR-intensive industries was 9%, which is lower than what has been found for other Latin American countries. Plant variety rights-intensive industries showed the highest premium, at 41%. Overall, this is consistent with the fact that value added per worker is higher in IPR-intensive industries than in other industries. However, in Argentina copyright-intensive and GI-intensive industries exhibited salaries below those of non-intensive industries.
- A salient feature of IPR filing in Argentina is that the share of resident applicants is significantly low. Only around 12% of patent applications were made by residents in 2014-2019.

1.2. IPR-intensive industries in Argentina

The IPRs covered in this study are patents, trade marks, designs, copyrights, geographical indications (GI), and plant variety rights (PVR). IPR-intensive industries are defined as those showing an above-average number of filings of IPRs per employee compared with other IPR-using industries.¹ This means that an industry is identified as IPR-intensive in Argentina if -for at least one of the IP rights under consideration- the number of IPRs per employee exceeds the employment-weighted average of IPRs per employee of all industries making use of that same IP right. IPR-intensive industries in are concentrated in manufacturing, retail and wholesale activities,

¹ Due to data limitations, we cannot distinguish between IPRs that were applied for and IPRs that were subsequently granted.

and services sectors, as shown in Chapter 6. About half (56% of industries) combine two or more IP rights intensively.

The contribution of IPR-intensive industries to two main economic indicators – employment and output – is summarised in Table 1 and Table 2. To minimise the impact of data gaps in economic statistics and avoid attaching undue importance to a particular year, the economic indicators were calculated as an average for the years 2014-2019.

As shown in Chapter 7, on average, 45.2% of all formal employees in Argentina were employed in IPR-intensive industries in the 2014-2019 period. This percentage is higher than the 29.2% contribution of IPR-intensive industries to employment in the EU for the 2014-2016 period (EPO and EUIPO, 2019). Almost 3 million formal employees worked in IPR-intensive industries in Argentina per year, on average, in 2014-2019. Trade mark-intensive industries contributed the most to employment, with 25.3% of employees, followed by copyright-intensive (18.4%), design-intensive (16.7%) and patent-intensive industries (14.6%). PVR-intensive industries and GI-intensive industries contributed with less than 1%.

Table 1: Direct contribution of IPR-intensive industries to formal employment, 2014-2019

IPR-intensive industries	Employment (direct)	Share of total salaried employment (direct)
Copyright-intensive	1,198,287	18.4%
Design-intensive	1,089,170	16.7%
Geographical indications-intensive	35,446	0.5%
Patent-intensive	948,410	14.6%
Plan varieties-intensive	52,709	0.8%
Trade mark-intensive	1,646,374	25.3%
All IPR-intensive	2,942,519	45.2%
Total formal employment in Argentina	6,505,046	

Notes: Due to overlapping use of IP rights, the sum of the shares of the individual IPRs exceeds the total share of IPR-intensive industries. Total employment includes salaried employment only and it does not include independent employment.

In terms of output, measured by gross domestic product (GDP), IPR-intensive industries generated 42% of GDP in Argentina in the 2014-2019 period (Table 2). This is similar to the contribution of IPR-intensive industries to GDP in the EU for 2014-2106 (44.8%). Trade mark-intensive industries accounted for 26.8%, copyright-intensive and design-intensive industries for 15.3% and 15.1%, respectively. Patent-intensive industries contributed with 13.5%. The contribution of PVR-intensive and GI-intensive industries was around or below 1%.

Table 2: Contribution of IPR-intensive industries to GDP, 2014-2019 average

IPR-intensive industries	Value-added / GDP (Argentine 1,000,000 pesos)	Share of total GDP
Copyright-intensive	1,657,861	15.3%
Design-intensive	1,629,159	15.1%
Geographical indication-intensive	39,467	0.4%
Patent-intensive	1,456,996	13.5%
Plant varieties-intensive	11,944	1.1%
Trade mark-intensive	2,896,297	26.8%
All IPR-intensive	4,527,974	41.9%
Total GDP	10,814,334	

Notes: Due to overlapping use of IP rights, the sum of the shares of the individual IPRs exceeds the total share of IPR-intensive industries.

The contributions of IPR-intensive industries to employment and GDP imply that value-added per worker was slightly higher in IPR-intensive industries than in other industries over the period under study. In theory, then, IPR-intensive industries should show a wage premium compared to other non-IPR-intensive industries. In fact, as Table 3 shows, IPR-intensive industries paid their employees 10% higher wages than other industries, almost a fifth of what EPO and EUIPO (2019) found for the EU.

The average wage in IPR-intensive industries was AR\$ 26,912, compared to AR\$ 24,563 for non-IPR-intensive industries, which implies a 10% wage premium for IPR-intensive industries in 2014-2019. PVR-intensive industries showed the highest wage premium (45%), followed by trade mark-intensive industries (25%), design-intensive industries (13%) and patent-intensive industries (10%). However, not all IPR-intensive industries had a positive premium. Wages in copyright and GI-intensive industries were lower than in non-IPR-intensive sectors and were below the national average for the period considered in the study.

Table 3: Average wages in IPR-intensive industries, 2014-2019

IPR-intensive industries	Average wage (Argentine pesos per month)	Premium (compared to non-IPR- intensive industries)
Copyright-intensive	23,271	-5%
Design-intensive	27,459	12%
Geographical indications-intensive	24,372	-1%
Patent-intensive	26,676	8%
Plant varieties-intensive	34,636	41%
Trade mark-intensive	30,667	25%
All IPR-intensive	26,851	9%
Non-IPR-intensive	24,598	
All industries	25,617	

Note: based on wages of salaried employees.

Chapter 7 includes an analysis of the contribution of IPR-intensive industries to international trade in goods and services. As shown in Table 4, during 2014-2019, IPR-intensive industries in Argentina accounted for 56.4% and 81% of exports and imports of goods, respectively, generating a trade deficit of roughly US\$ 16,106 million. In the case of exports, trade mark-intensive industries are responsible for a sizable share, followed by patent-intensive industries. In the case of imports, the most relevant share corresponds to design-intensive industries, with almost similar shares than trade mark- and patent-intensive industries.

Table 4: External trade in IPR-intensive industries, 2014-2019

IPR-intensive industries	Exports (US\$ million)	Share of total exports	Imports (US\$ million)	Share of total imports
Copyright-intensive	588.1	1.0%	1,964.9	3.2%
Design-intensive	13,942.5	23.9%	28,153.3	46.5%
Geographical indication-intensive	1,162.4	2.0%	67.6	0.1%
Patent-intensive	17,600.8	30.1%	26,429.6	43.6%
Plant varieties-intensive	11,254.3	19.3%	1,690.1	2.8%
Trade mark-intensive	21,837.7	37.4%	27,758.6	45.8%
All IPR-intensive	32,952.8	56.4%	49,058.6	81.0%
Total for Argentina	58,381.0		60,590.3	

Notes: Due to overlapping use of IP rights, the sum of the shares of the individual IPRs exceeds the total share of IPR-intensive industries.

1.3. Methodology and data

The methodology to identify IPR-intensive industries and estimate their contribution to the Argentine economy used in this study follows EPO and EUIPO (2019) as closely as possible to achieve maximum comparability. Its principles are essentially the same: first, determine IPR use across industries and identify those industries that use IPR more intensively; second, use industry-level economic data to characterize IPR-intensive industries in terms of employment, wages, value added (GDP), and international trade; third, compare industry-level aggregates to the overall economy to estimate the weight of IPR-intensive industries in the economy. Chapter 5 includes a detailed description of the methodology and sources of data used in this study.

A wide variety of databases and other data sources were used to determine which industries are IPR-intensive and to assess the contribution of these industries to employment, GDP and other economic indicators. To decide which industries are IPR-intensive, IPR register databases of LATIPAT (by the EPO); WIPO, as a source of trade marks and designs records; and the National Register of Cultivars (RNC) of Argentina's National Institute of Seeds (INASE) were matched with a business record from Argentina's Internal Revenue Federal Administration (AFIP), as of 2019. These registers provide the database to identify applicants' industry classification. The business register provides information on businesses registered economic activity, which was used to calculate the number of trade marks, designs, patents and PVRs per employee for each industry. Industries with IPRs per employee above an employment-weighted average among industries with IPR were considered to be IPR-intensive. We used a string-matching algorithm to perform the match between IPR registers and the business register as well as manual revision to improve the fraction of registers that could be matched. Depending on the type of IPR, between 72% and 98% of IPRs filed by Argentine residents were matched with information of their owners and assigned an economic activity.

A relevant feature about IPR applications in Argentina is that they are predominantly made by foreign residents: only around 12% of patent applications were made by residents in 2014-2019. This low fraction is not specific to the period under study but a general characteristic of patenting activity in Argentina. The average fraction of patents filed by residents in the last 10 years in Argentina is 15.8%, as reported by RICYT². Appendix 8 includes a discussion about the methodological challenges implied by this feature and compares patenting behaviour between residents and non-residents in Argentina.

² RICYT collects comparable science, technology and innovation indicators, including patent applications and patents granted by the country of residence of the applicant for Latin America and the Caribbean. See www.ricyt.org.