FOCUS ON
Objective € 100 billion: welcome to the Machine

Produced by the Economic Analysis and Research

EXECUTIVE SUMMARY

- *Capital machinery is the pillar of the national trade surplus. With a value of € 82 billion, the sector represents the front line of our exports, and yet part of its potential is still unexpressed or undervalued.*
- *Italian capital machinery manufacturers are mostly small and midsize companies but they play a prominent role in the national economy: in fact, they account for 6% of manufacturing companies and 12% of industry jobs. Size remains a characteristic and a penalizing factor from the standpoint of economies of scale, compared to European competitors, which are almost twice as large on average.*
- *A survey conducted by SACE including over 200 Italian companies in the sector revealed some distinctive traits and some issues about the Italian capital machinery industry:*

  - the competition is international but the supply chain is primarily national;

  - size and restricted access to non-banking sources of capital are still hindering growth;

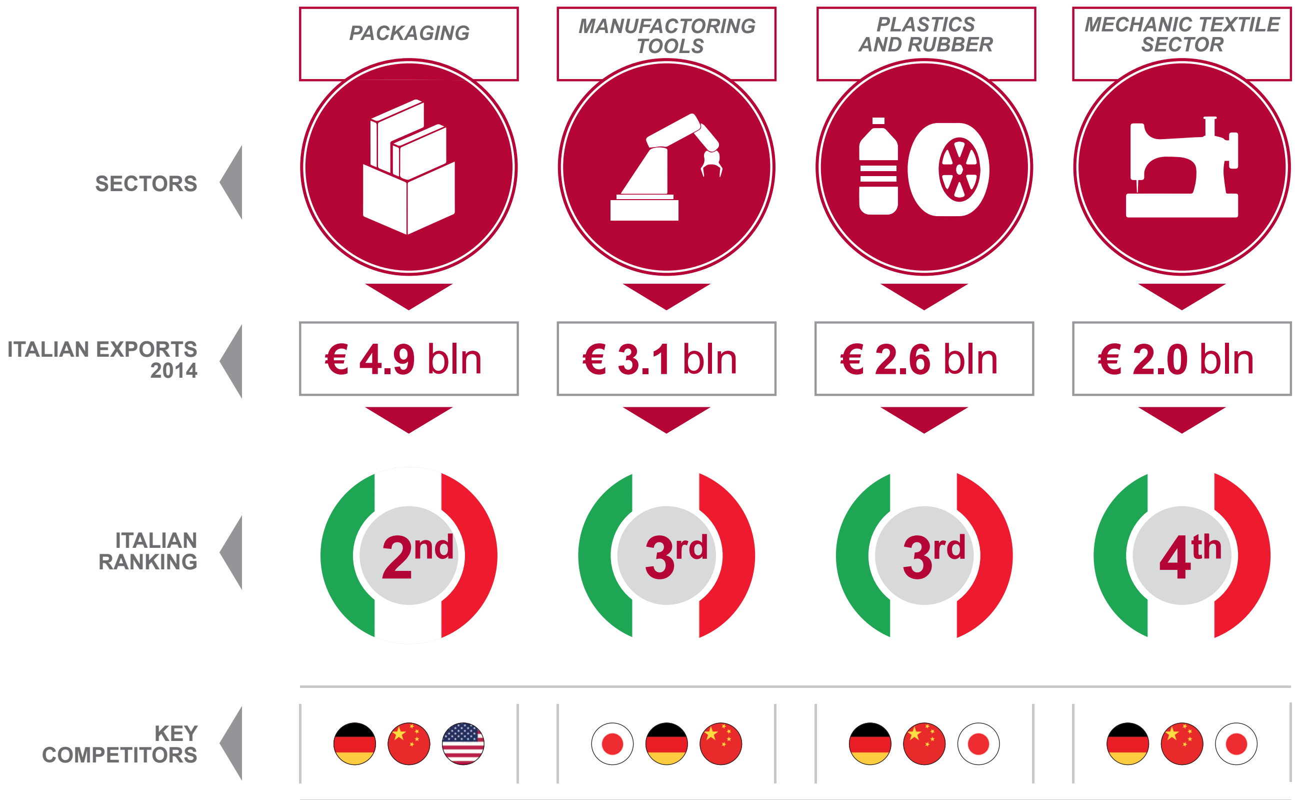
  - the primary exposure is still to neighboring markets;

  - product personalization and high technological content are distinctive aspects of production, but there are competitive disadvantages on brand and pricing.
- *The opportunities for Italian exports in this sector are strong in various countries, including the United States, Spain and Poland, but also in the United Arab Emirates, India and Mexico. A new, less conservative business model is the essential prerequisite for seizing the opportunities of internationalization and transforming the goal of € 100 billion in exports of capital machinery in 2019 into a concrete reality.*

CAPITAL MACHINERY IN THE WORLD SPEAKS ITALIAN (RATHER FLUENTLY)

Capital machinery[01] is worth € 1,600 billion worldwide, 9% of total international trade in goods. The advanced countries, including China, dominate in terms of both supply and demand: **Italy, with a value of € 82 billion, ranks fifth among the principal exporters, after China, Germany, the U.S. and Japan**. More specifically, Italy ranks high in a few segments of excellence, including packaging machinery (2nd place), machine tools (3rd), rubber and plastics machinery (3rd), and textile machinery (4th) (Chart 1). Capital machinery, in fact, is the first item on our list of exports of goods (20.5%)[02].

CHART 1. *Segments of excellence of Italian capital machinery*



Source: SACE processing of UN Comtrade data

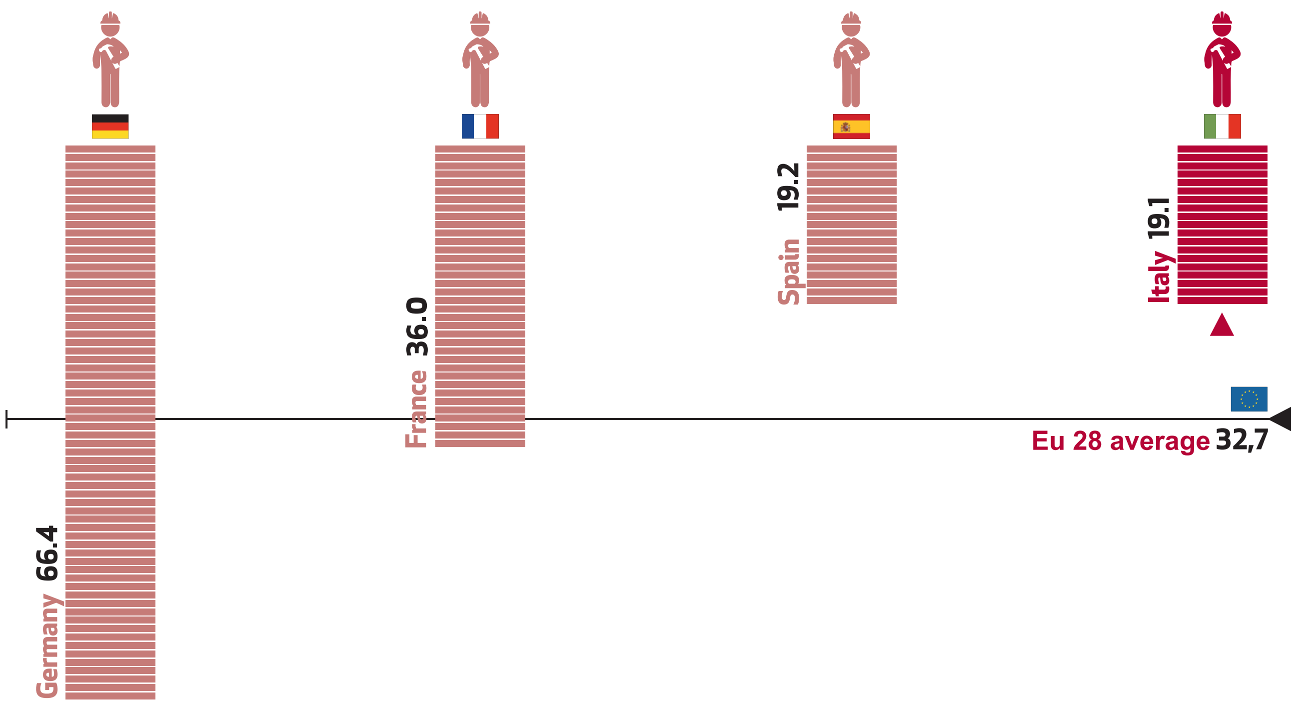
Of the 92,000 companies in the sector in Europe, one in four is Italian. These are primarily small and midsize firms with average dimensions less than one-third of those in Germany (Chart 2) but that overall have significant weight in our economy: they represent 6% of manufacturing companies and 12% of the jobs in

[01] *Capital machinery is the manufacturing sector of machinery for specific uses, machinery "necessary" to the operation of other machinery, and "autonomous" instruments and machines such as tooling, ovens, rolling mills and weighing devices.*

[02] *For an in-depth examination of international trade in capital machinery and the leading sectors in Italy, see the 2016-2019 SACE Export Report "RE-Action. Export calling".*

industry nationwide. Small size, a well-known characteristic of the entire Italian industrial system, enables companies to be more flexible but hinders them from achieving the economies of scale and scope necessary to compete globally.

CHART 2. *Average size of sector companies in Europe (Average number of employees per company)*



Source: Eurostat

The competitive context is diversified and complex. Smaller companies typically have less financial resources to invest in R&D, personnel training, marketing and brand management, or in increasing production capacity to handle large orders. Despite these structural limitations, however, Italian capital machinery companies continue to excel in product quality and service and a high degree of personalization. But is this enough to retain or increase their market shares?

THE SACE SURVEY

SACE has conducted a survey (for an in-depth examination, see the Appendix) including over 200 Italian companies in capital machinery. The picture it paints is quite clear and varied and reveals distinctive traits and issues in the sector.

THE COMPETITION IS INTERNATIONAL BUT THE SUPPLY CHAIN IS PRIMARILY NATIONAL

Competitive pressure comes especially from outside our borders: more than half the respondents stated that their competitors are more foreign than Italian or only foreign (Chart 3), and this is especially true for the larger companies (with more than 100 employees), while for smaller companies the domestic competitors are still important (Chart 3A). The principal competitors come from Germany, China and the United States.

CHART 3. *WHO ARE YOUR DIRECT COMPETITORS?*

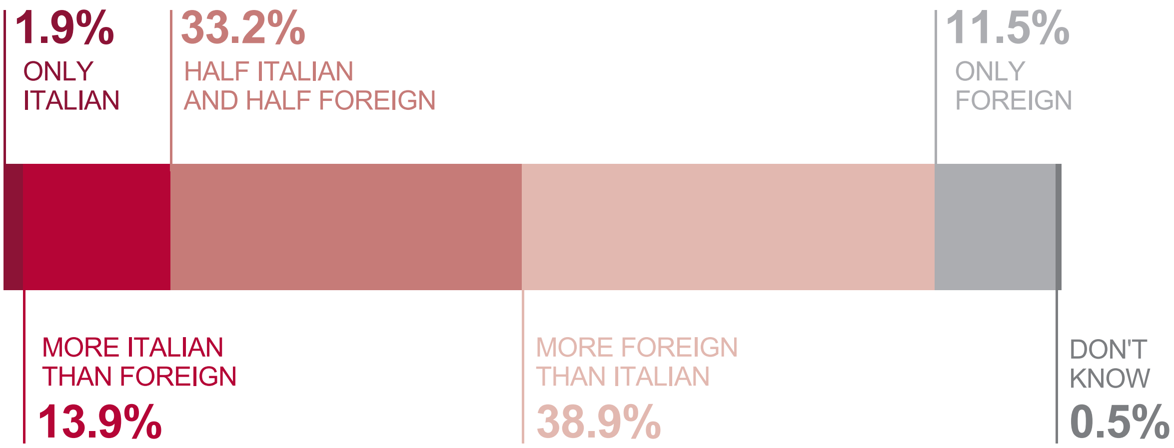
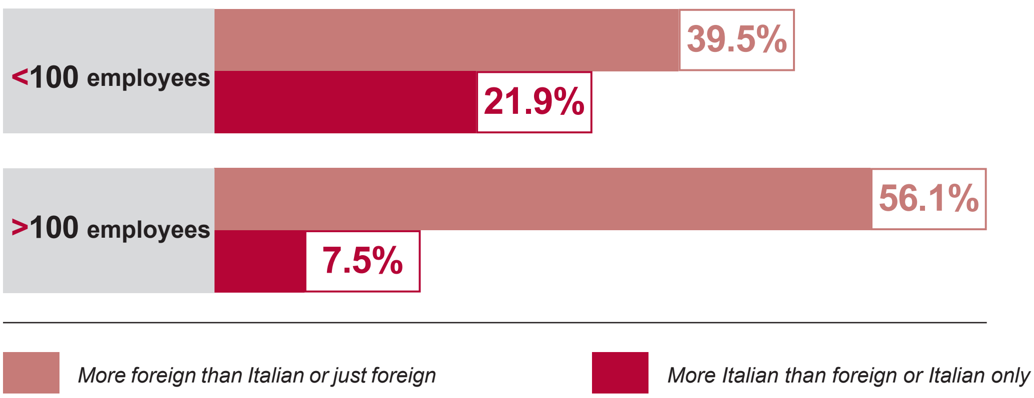


CHART 3A. *WHO ARE YOUR DIRECT COMPETITORS?*

[Breakdown by company size]



The upper end of the supply chain, on the other hand, is primarily Italian. The suppliers of 77% of the companies are primarily or exclusively Italian (Chart 4), although only a few are regarded as strategic, i.e. difficult to replace. Supply represents over 50% of total finished product cost for over half of the respondents.

CHART 4. *WHO ARE YOUR SUPPLIERS?*

SIZE AND LIMITED ACCESS TO NON-BANKING SOURCES OF CAPITAL REMAINS A LIMITATION ON GROWTH

The average company size (19 employees), though larger than the Italian industrial system average (4) but less than the European average for the sector (33), and the relatively simple governance of the small and midsize companies, usually family-run, are two characteristics of the Italian capital machinery industry[03]. Nonetheless, the sector presents a high level of innovative companies open to new geographical areas and renewal. In the past five years, in fact, almost half the companies have invested in R&D and innovation, and over one-fourth in the penetration of new markets and company reorganization (Chart 5). The primary source of financing is still bank debt, in an overall context where the recourse to bond issues is marginal and market listing, private equity funds and venture capital are basically unutilized (Chart 6). In the recent years of credit crunch, however, sector companies have resorted to self-financing, thus strengthening their balance sheets: between 2007 and 2014, in fact, the degree of equity financing increased by 24% to 29.4%, while the financial lever decreased from 4.2% to 3.4%[04].

[03] *Source: ISTAT. 2015 annual report*
[04] *Nomisma on 2014 CRIF, Cribis D&B data.*

CHART 5. *IN WHICH OF THE FOLLOWING AREAS HAVE YOU INVESTED MOST IN THE PAST FIVE YEARS?*

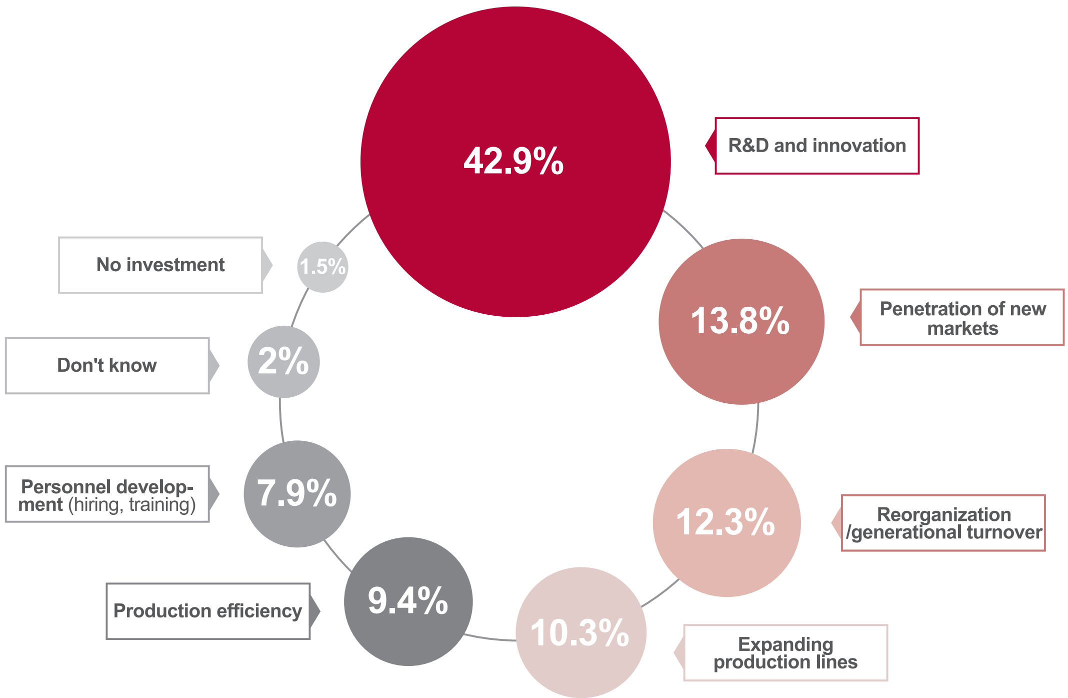
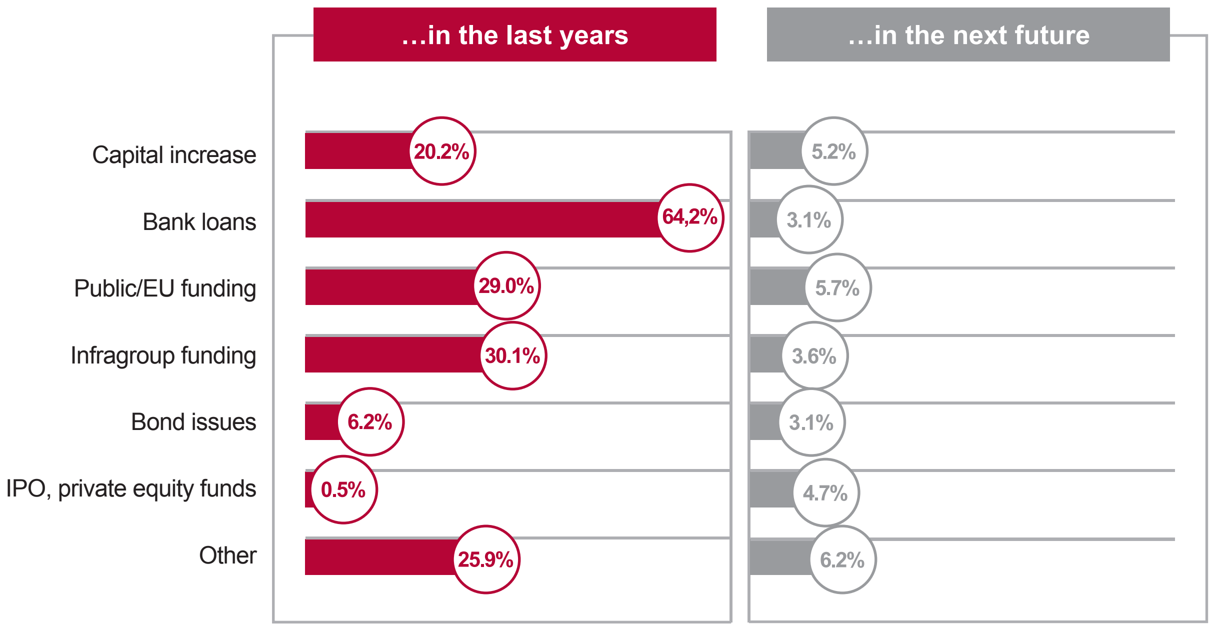


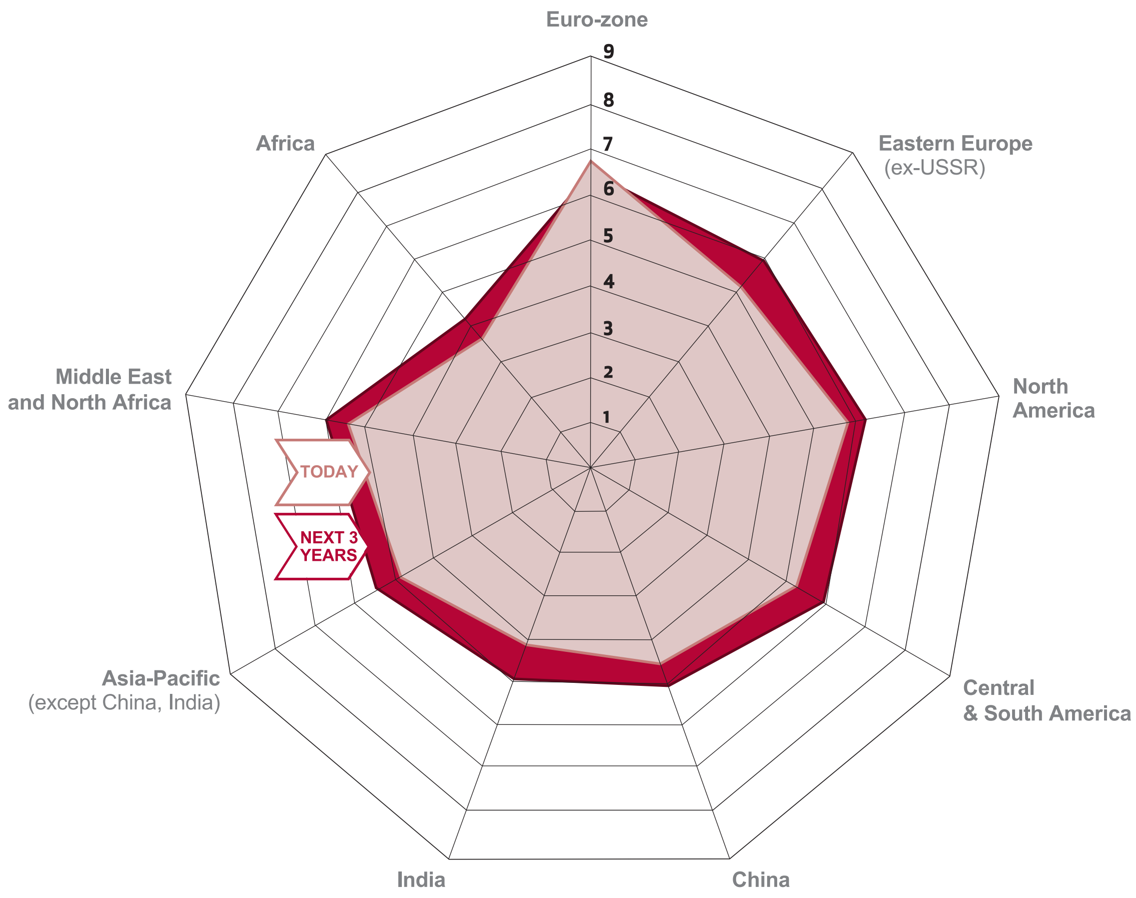
CHART 6. *WHAT ARE THE MAIN SOURCES OF YOUR INVESTMENT...?*



THE PRIMARY EXPOSURE IS STILL TO NEIGHBORING MARKETS

The most important geographical areas for foreign sales are the Euro-zone, North America, the Middle East, and North Africa, but this "gravitational effect" is expected to decline the coming years, but only gradually; the nearest countries will lose some of their attraction in favor of other markets such as Central and South America, India, the Pacific area, and Sub-Saharan Africa (Chart 7). Despite the recent slowdown in the emerging countries, in fact, the growth prospects in the medium and long term are still positive for many of them.

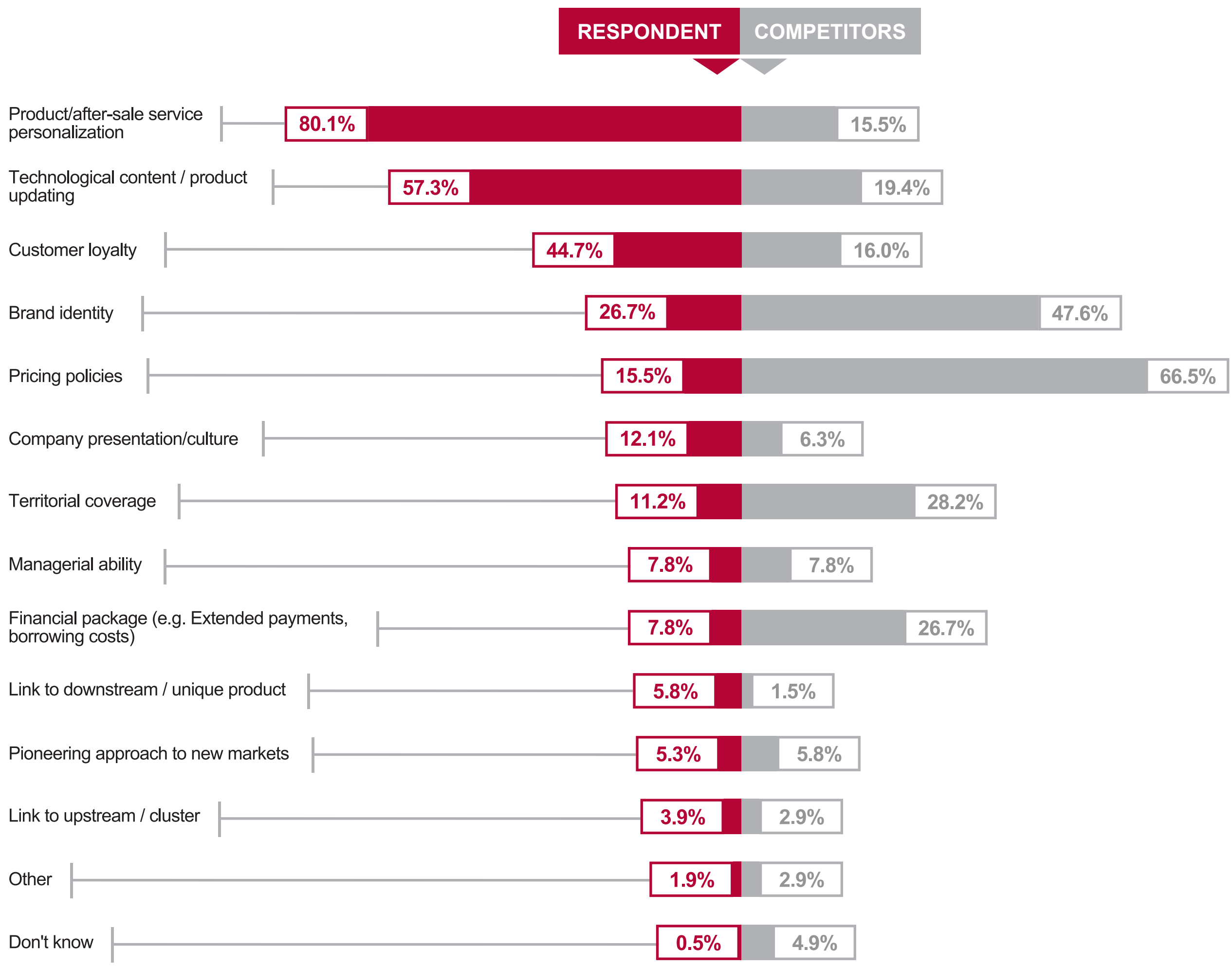
CHART 7. *HOW IMPORTANT ARE THESE GEOGRAPHICAL AREAS FOR YOUR COMPANY, NOW AND IN THREE YEARS' TIME? [1=no importance; 9=maximum importance]*



PRODUCT PERSONALIZATION AND HIGH TECHNOLOGICAL CONTENT ARE DISTINCTIVE FEATURES OF PRODUCTION, BUT THERE ARE COMPETITIVE DISADVANTAGES IN BRANDING AND PRICING

Product characteristics are the competitive advantage of Italian companies, notable for the degree of personalization, technological content of the machinery, and customer loyalty. On the other hand, there is a strong perception of disadvantage with respect to competitors in the areas of pricing, branding, territorial coverage, and financial package (Chart 8), due in part to the size limitations that hinder the economies of scale and scope necessary to offer more competitive pricing conditions. In the "traditional" Made in Italy, e.g. food, fashion and design, the Italy brand has immediate visibility that often justifies premium prices with respect to foreign brands; but for machinery manufacturers, the Italy brand in their sector is weak or unperceived.

CHART 8. *WHAT ARE THE MOST IMPORTANT CHARACTERISTICS THAT DISTINGUISH YOUR PRODUCTS FROM THOSE OF YOUR COMPETITORS? (Max 3 responses)*



Over 44% of the respondents, in fact, believe that the Made in Italy brand of machinery is inferior to the Made in Germany brand, while only 17% regard it as superior (Chart 9). This perception improves, however, for the larger companies (with over € 250 million in sales): in this case, the Made in Italy brand is deemed superior to Germany's by almost one-third of the respondents (Chart 9A).

CHART 9. *WHAT VALUE DO YOU FEEL THE MADE IN ITALY BRAND OF MACHINERY HAS WITH RESPECT TO MADE IN GERMANY?*

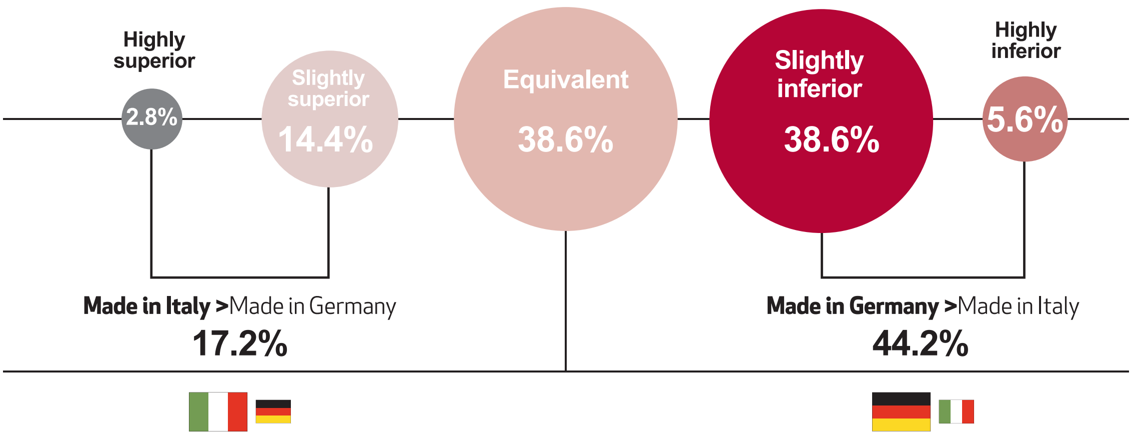
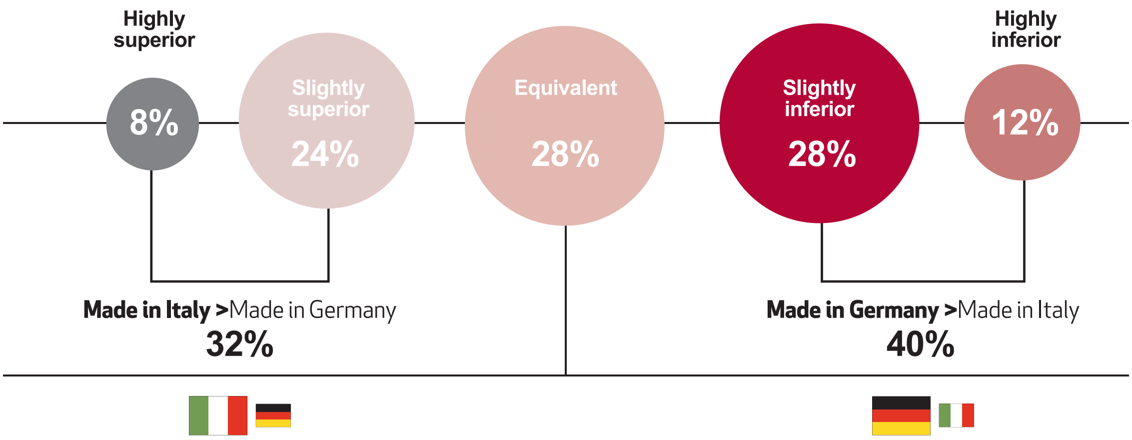


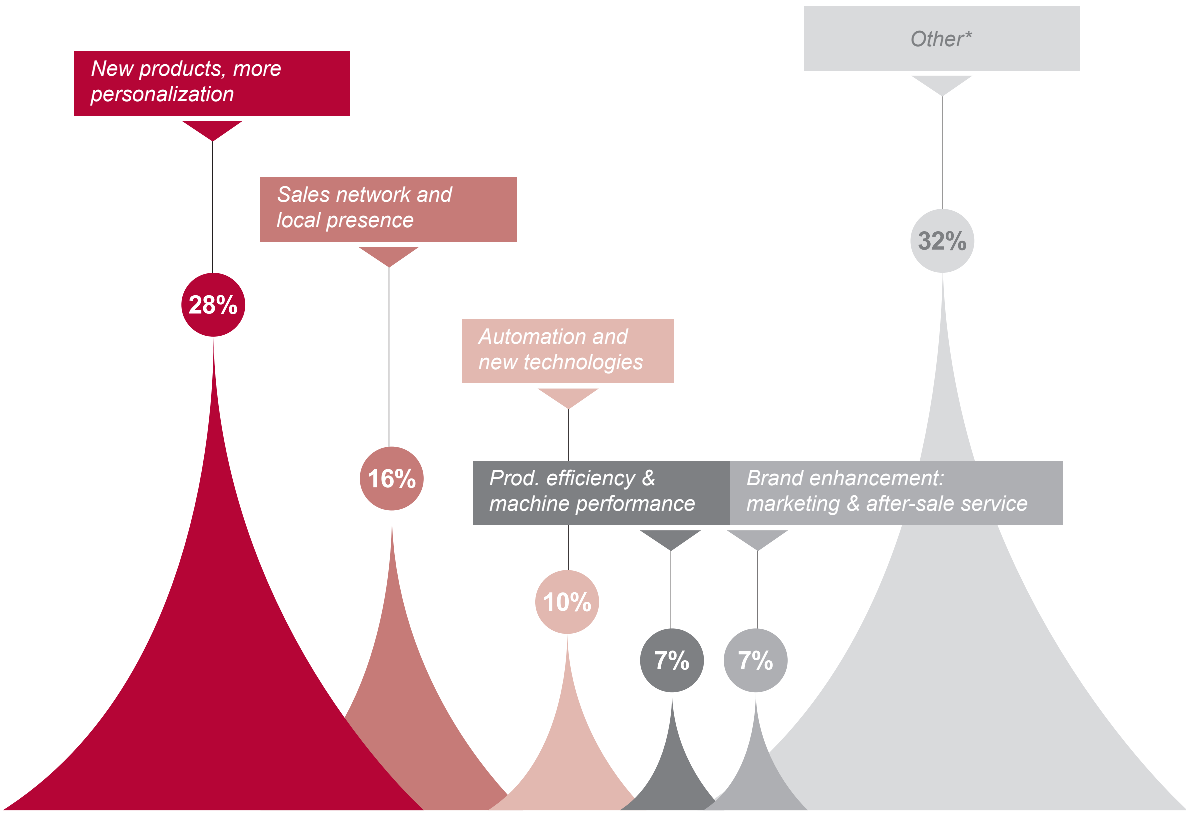
GRAFICO 9A. *WHAT VALUE DO YOU FEEL THE MADE IN ITALY BRAND OF MACHINERY HAS WITH RESPECT TO MADE IN GERMANY? [Only large companies with sales of over € 250 million]*



THE FUTURE OUTLOOK REMAINS OPTIMISTIC

Almost a third of the respondents state that their companies are preparing to approach or expand in new markets, with new products and greater personalization, 16% with investments to expand their commercial networks and 10% with process innovations and new technologies (Chart 10). On the whole, the outlook remains cautious or positive: 85% of the companies feel that 2016 will be as good or better than 2015 for exports, in line with SACE estimates, which project a +3.8% for sector exports this year.

CHART 10. *WHAT INNOVATIONS DO YOU PLAN TO INTRODUCE TO APPROACH OR EXPAND IN NEW MARKETS?*



*Including investments in highly-qualified personnel, new financial instruments, new markets, sustainability and energy savings, partnerships, commercial agreements and joint-ventures with local companies, R&D, production delocalization and opening of branches abroad, conferences and trade shows, acquisitions and regulatory compliance.

CHALLENGES AND OPPORTUNITIES FOR ITALIAN COMPANIES

The context emerging from the survey is generally one of strong continuity with the past: the worldwide growth of Italian machinery is focused more on personalization and product quality and less on building internationally recognized brands. Considering that small Italian companies struggle to compete with larger foreign firms, the search for a new business model that is more open and innovative is a mandatory step. The new paradigm, partly inspired by the standards long established in Germany and the United States, requires companies to incorporate efficiency, innovation and managerial ability into the competitive advantage of Made in Italy.

Small is no longer so beautiful. Nothing new: Italian companies are small. The capital machinery manufacturers, in particular, are too small compared to their average foreign competitor. For micro-companies there is fine line between "virtues" (limited financial requirements, flexibility, relationship of confidence with customers, leadership of the owner/founder) and "defects" (lack of liquidity for new investments, absence of economies of scale, concentration of customers, generational turnover problems, and obstacle to managerial ability). It is therefore imperative to grow and look forward. The companies that performed well throughout the economic crisis and have been the most successful in recent years, in fact, are those with sales in excess of € 50 million (the "pocket multinationals") that have focused their production and marketing abroad. In general, in periods of market turbulence, size "protects" profitability, for both domestic companies and those projected abroad, though in the latter case with extremely positive results[05]. Successful companies, in fact, are those that have dared more than the others to venture into less traditional areas, such as Latin America and Africa, thanks to a greater capacity to manage the risks and costs of more complex markets. Seizing these opportunities, however, requires a targeted approach, with the right mix of exports and investments, and an overall strategy of risk hedging and management.

Machinery is not fashion. As noted earlier, the distinctive feature of Italian companies competing abroad is their high degree of product personalization, the strong technological content of the machinery, and all those "tailoring" components that distinguish Italian manufacturing in other sectors. And yet these elements have not been sufficient to create international brand recognition for Made in Italy machinery, as already exists for fashion, design and agro-foods, at the level of the Made in Germany brand, at least in the perception of entrepreneurs. Why? **The competitive dynamics of the machinery industry are different from those of consumer product sectors: brands**, in fact, **are built** not only on the characteristics of the catalogue and product innovation but also **on production efficiency and process innovation**, which help keep costs low and prices competitive while maintaining high quality standards. Beginning in 2012, the companies that invested in Industry 4.0 technologies have performed better in terms of return on sales (ROS 3-5% higher on average) and return on investment (ROI 4-6% higher on average) than those that have made no investment in digital manufacturing[06]. Germany launched it *Industrie 4.0* plan in 2011, anticipating the times and making great progress from this standpoint;

[05] *M. Dallocchio, 2016. "Internazionalizzazione – Segreti per competere". SDA Bocconi.*
[06] *Fondazione Nord-Est and Prometeia, 2015. "Make in Italy. 1° rapporto sull'impatto delle tecnologie digitali nel sistema manifatturiero italiano."*

Italy presented its “*Industry 4.0, the Italian road to manufacturing competitiveness"* plan in recent months, finally formulating a few lines of intervention to promote the development of the fourth industrial revolution: from the revival of industrial and R&D investments to the management of big data, from skills training to the channeling of financial resources[07]. **The challenge,** not only for companies but also for policymakers, **is therefore to create a more industrial sector without sacrificing the strengths typical of the Italian entrepreneurship: craftsmanship, creativity, supply chain relationships, and customer care.**

Entrepreneurs are not (always) managers . Ownership structure, we know, is another limitation on the growth of Italian capital machinery manufacturers, especially small-midsize ones, generally family-owned. A Nomisma survey revealed that 45% of the machinery companies in Italy are family-owned and family-run, while 20% are family-owned but entrust operations to outside management; foreign-owned companies represent only 17% of the total, all without a family at the helm[08]. On the one hand, the “founding family” does not per se preclude success but, on the other, generational succession does not guarantee continuity of company results long term. The best-performing companies are not family-owned or have a valid, competent management structure to which the entrepreneur "delegates" the operational side. **The presence of diversified investors is also a qualifying factor in the new business model for competing**. Empirical evidence demonstrates that the propensity of entrepreneurs to open ownership is currently very limited[09]. Apart from buyouts, where the private equity fund holds a majority stake, for other operations (early stage and expansion) the equity interest is usually minority[10]. Advantages for entrepreneurs include consulting on financial aspects and on the formulation of strategies, support in introducing new products and/or patents and for initiatives abroad, and better access to the financial markets.

[07] *Document of the Conferenza of the Regioni of the 31 March 2016. “Industria 4.0: strategia per migliore definizione del quadro normativo.”*
[08] *Nomisma on 2014 CRIF, Cribis D&B data.*
[09] *Bank of Italy and AIFI surveys.*
[10] *Buyouts often coincide with succession in family-owned businesses, with the objective of increasing managerial and operational efficiency. Early stage operations support companies in their initial stage of life, while expansion helps companies mature and develop.*

WHAT OPTIONS FOR THE NEW BUSINESS MODEL OF ITALIAN MACHINERY MANUFACTURERS[11]

SMALL IS NO LONGER SO BEAUTIFUL

How to grow?

- *Aggregations into company networks and clusters*
- *Mergers, acquisitions and partnerships, domestic and cross-border*
- *Shifting the value chain into upstream and downstream activities*
- *Providing information to each link in the chain, internally and externally*
- *Global strategies not only for products/markets but also for the supply chain*
- *Global coverage against credit and liquidity risk*

MACHINERY IS NOT FASHION

How to make a difference?

- *Product personalization and technological content*
- *Investments in automation and production efficiency*
- *Industry 4.0 and digital manufacturing*
- *Processes reviewed with a cloud perspective*
- *Models of collaboration between research and industry*
- *Skills training*
- *Industrial policies to support SMEs*

ENTREPRENEURS ARE NOT (ALWAYS) MANAGERS

How can you change governance?

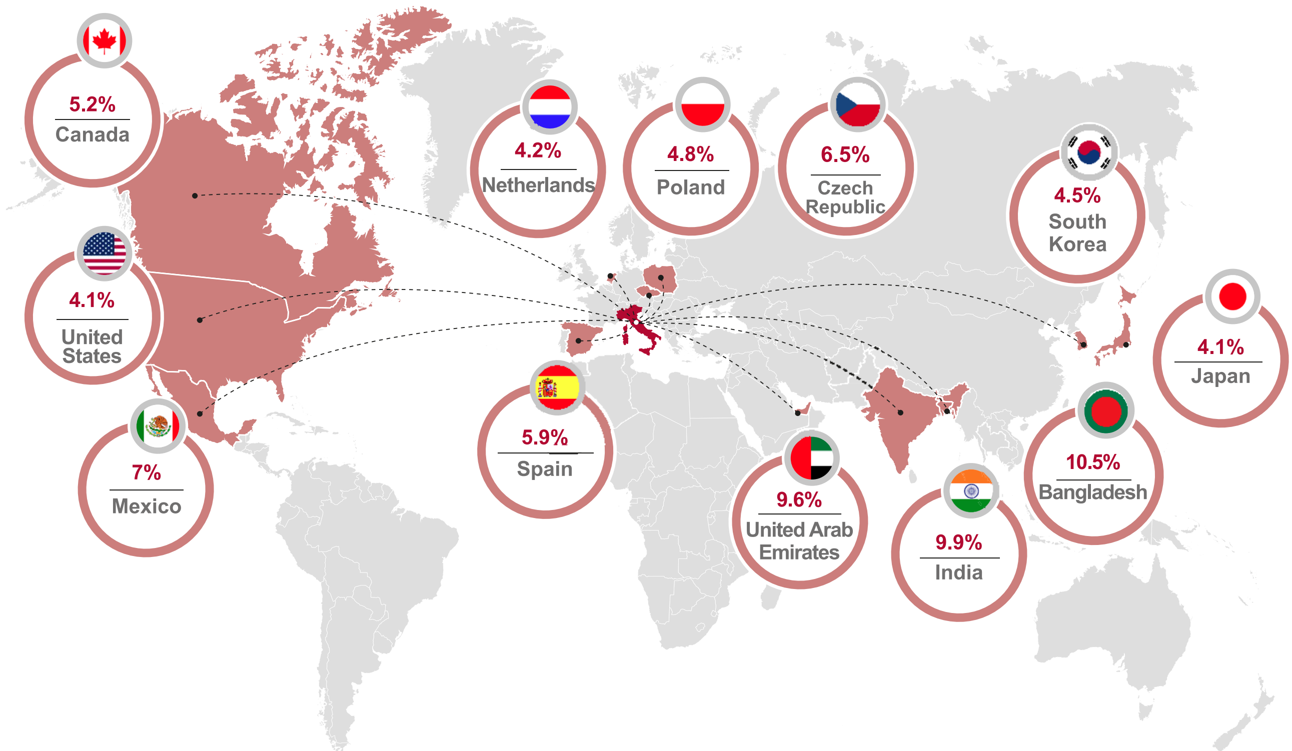
- *Openness to the capital markets*
- *Generational turnover*

[11] *For a more in-depth examination of the competitive drivers of Italian capital machinery companies, see the SACE 2016-2019 Export Report "RE-Action. Export calling".*

OBJECTIVE € 100 BILLION

In capital machinery, more than in other sectors, there are many small excellences but few "champions". They are usually small-midsize companies, unknown to the public at large, that work well and make our country competitive abroad. In 2014 machinery exports totaled € 82 billion, but the potential for further growth exists and is partially unexploited. A new competitive paradigm—which blends large size, greater propensity toward distant markets, investments in automation and efficiency, greater willingness to approach the capital markets, and an overall risk management strategy—and industrial policies more focused on supporting the hidden Made in Italy will give sector businesses the right tools to establish themselves in neighboring markets and attack frontier markets. According to SACE projections, exports of capital machinery will approach € 100 billion in 2019, because of greater demand from a few economies that will choose Made in Italy machinery. They include the United States, Spain, Poland and the Netherlands, which alone accounted for almost one-fourth of Italian machinery exports in 2014; but there are several emerging countries, such as the United Arab Emirates, India, Mexico, the Czech Republic and even Bangladesh, that display high growth rates in the imports of Italian machinery, more than 6.5% by 2019, ranking among the target markets to emphasize in coming years (Chart 11). Renew the business model of capital machinery manufacturers to better suit it to global challenges and make the objective of € 100 billion in exports a concrete possibility.

CHART 11. *Principal destinations for capital machinery exports (average growth projections 2016-2019).*



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