



Industry 4.0: Demand and Supply among SMEs

Research Department
Bozen, 17-19 September 2018

Agenda

1 Research's objectives

2 Italian demand for 4.0 technologies

3 Italian supply of 4.0 technologies

4 Methodology

- The first aim of this research is to offer evidence on **how fiscal incentives are shaping 4.0 investments of Italian firms**. The focus is on smaller companies and on their need for more digital skills.
- The second aim is to provide a **preliminary map of the Italian supply of 4.0 machineries**. The focus is on the ability of Italian firms to satisfy the increasing demand of 4.0 machineries.

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1 Research's objectives

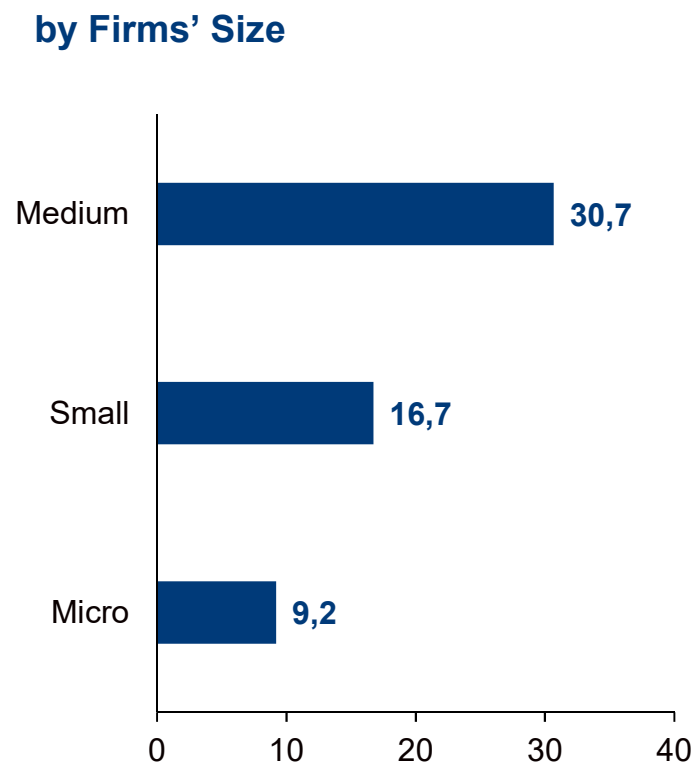
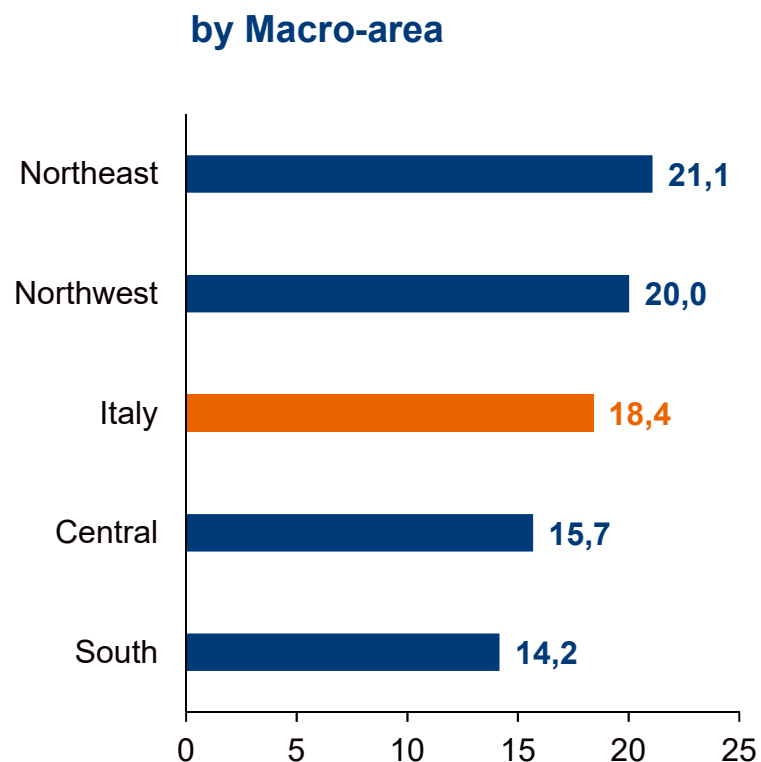
2 Italian demand for 4.0 technologies

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18.4% of Manufacturing firms are using 4.0 technology. ⁴ Medium companies at 31%. South Italy and Micro-enterprises far behind

Manufacturing: firms using 4.0 technology (%)

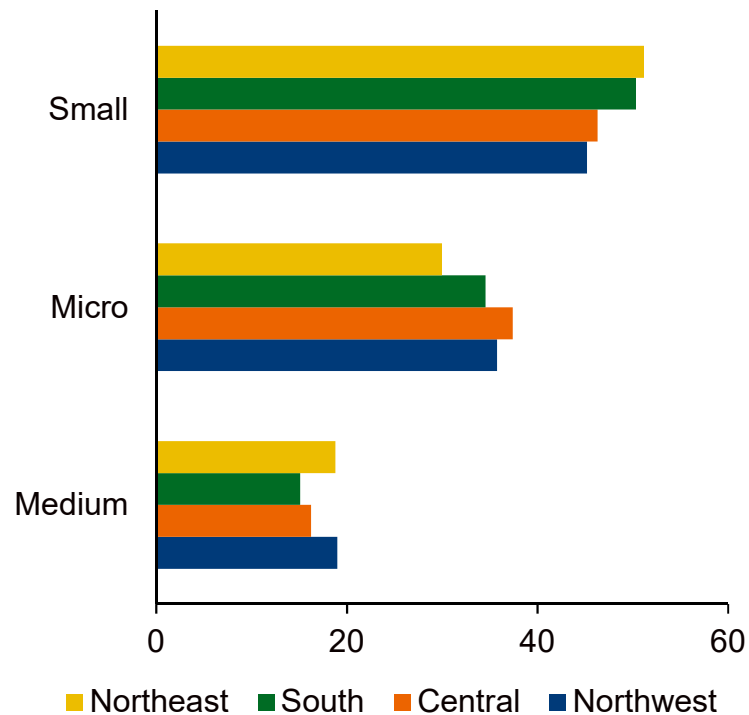


Source: Intesa Sanpaolo

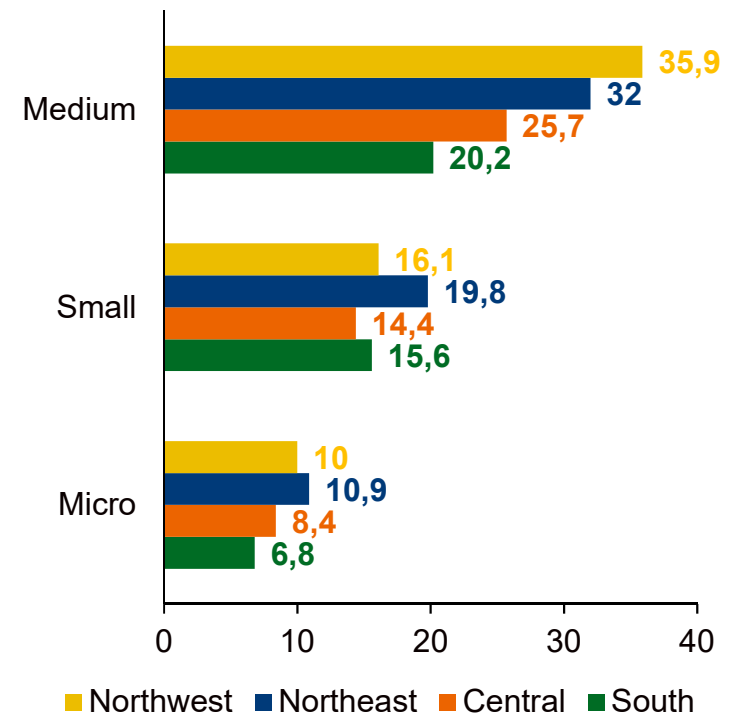
South Italy gap is explained by Medium enterprises

Manufacturing

Breakdown by firms' size (%)



Firms using 4.0 technologies (%)

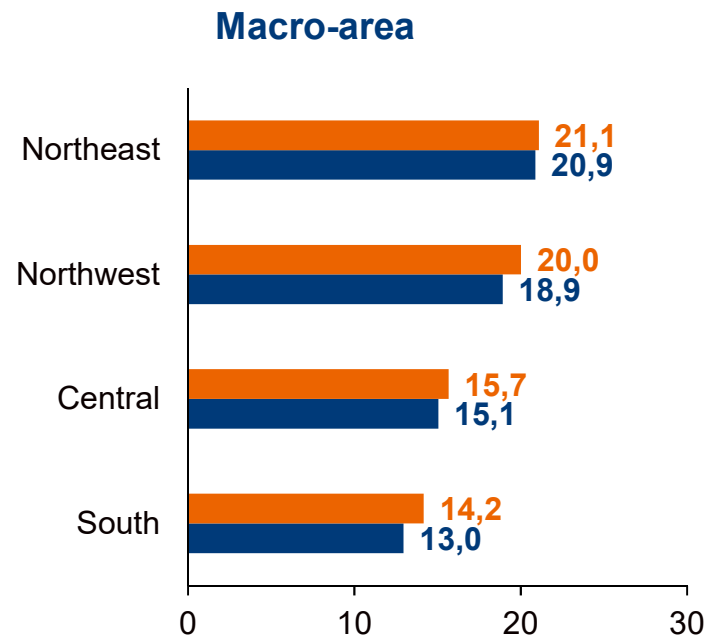


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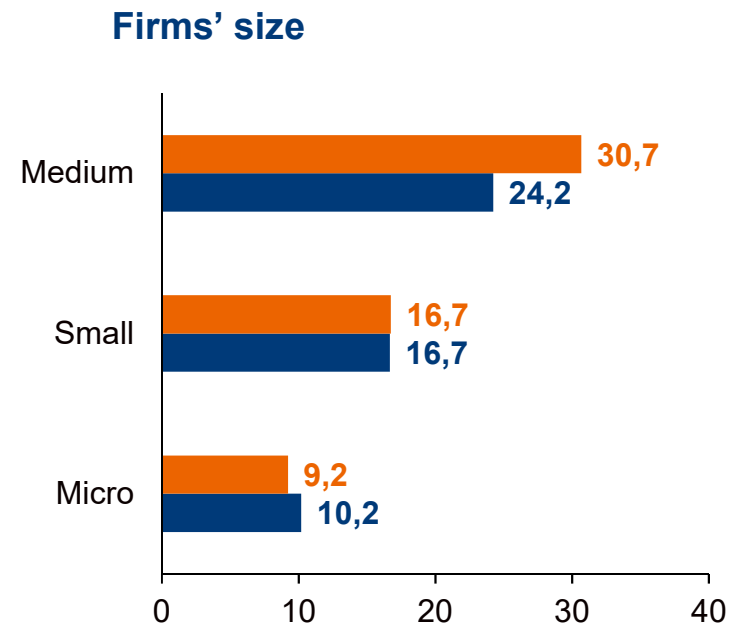
Many firms have become 4.0 recently, thanks to fiscal incentives

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Manufacturing: firms using 4.0 technologies (%) and firms with 4.0 investments in 2017-2018 (%)



- Firms using 4.0 technologies (%)
- Firms with 4.0 investments in 2017-2018 (%)



- Firms using 4.0 technologies (%)
- Firms with 4.0 investments in 2017-2018 (%)

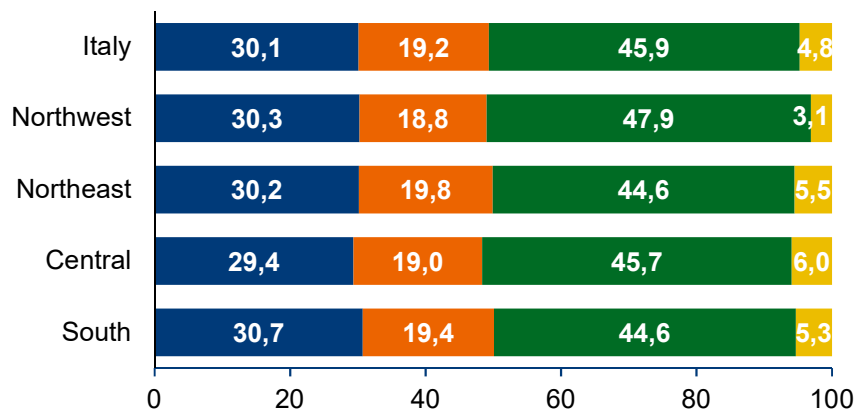
Source: Intesa Sanpaolo

Nearly one-third of firms would not have invested without fiscal incentives

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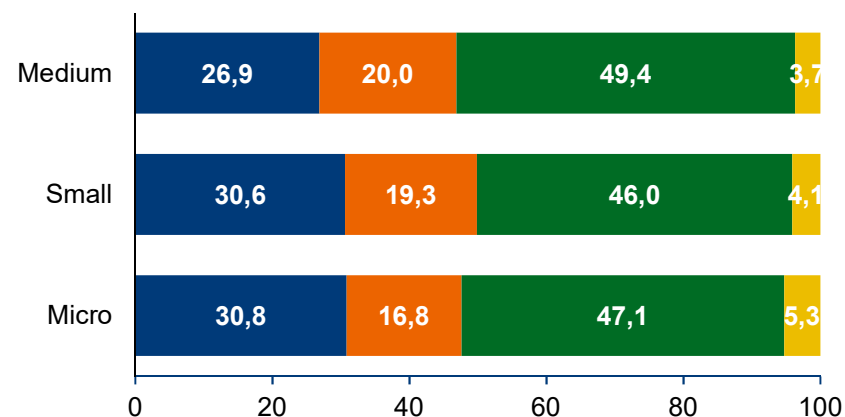
Firms with 4.0 investments in 2017 by reason of investment (total=100)

by Macro-area



- Not planned but necessary
- Anticipated (already planned after 2017)
- Already planned in 2017
- Wrong or not necessary, only to take advantage of fiscal incentives

by Firms' size



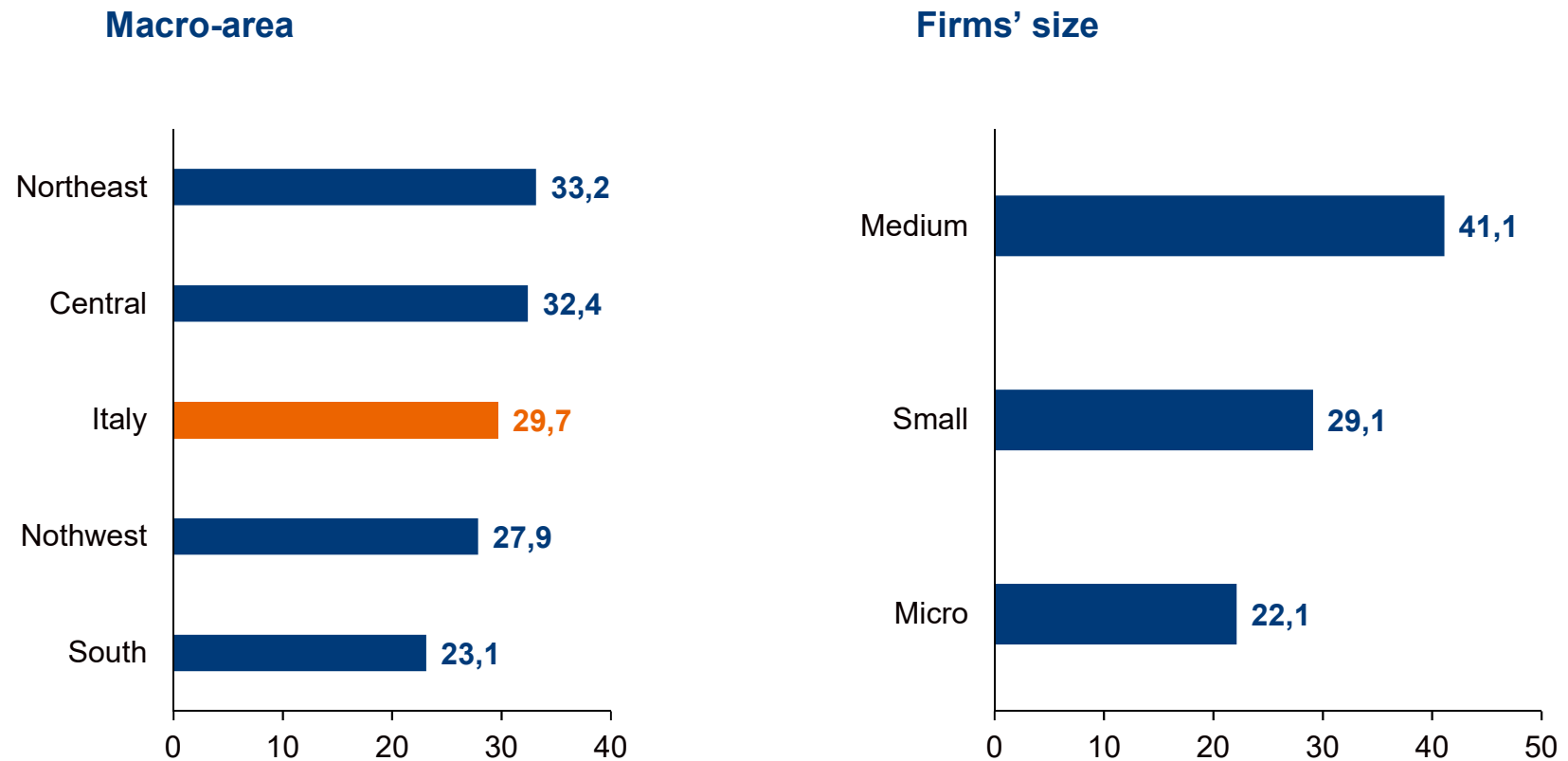
- Not planned but necessary
- Anticipated (already planned after 2017)
- Already planned in 2017
- Wrong or not necessary, only to take advantage of fiscal incentives

Source: Intesa Sanpaolo

4.0 firms are creating new jobs ...

Manufacturing: employment trend during 2015-2017 for 4.0 firms

(balances between the percentage of positive and negative answers; excluding «I don't know»)



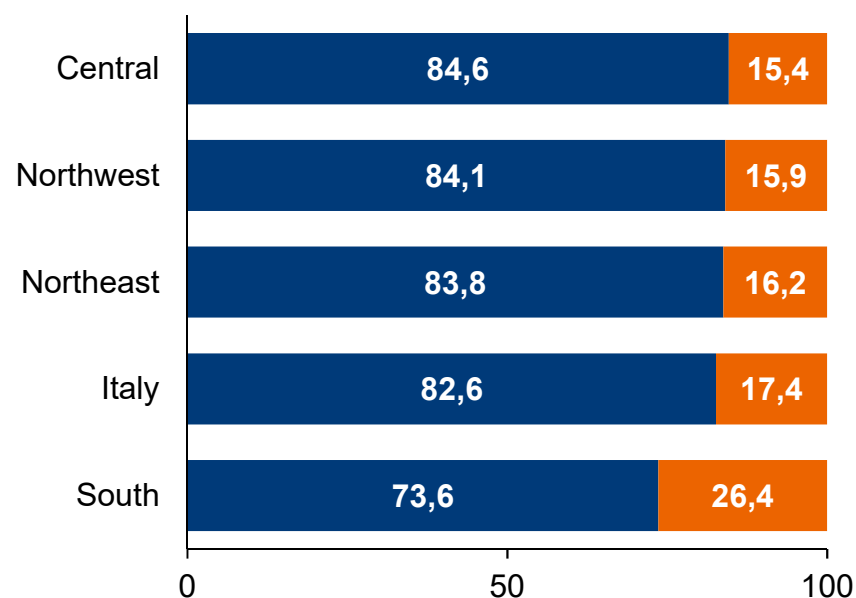
Source: Intesa Sanpaolo

... more than the rest of the economy

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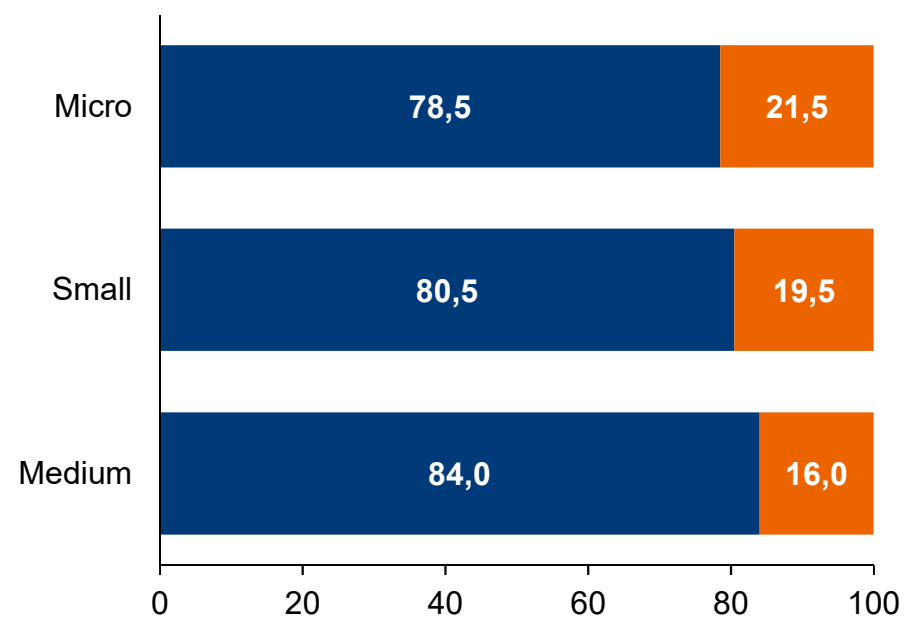
Manufacturing: employment trend in 2015-2017 by type of firm
(% of answers; excluding «I don't know»)

Macro-area



- Better employment trend in 4.0 firms
- Better employment trend in firms NOT using 4.0 technologies

Firms' size



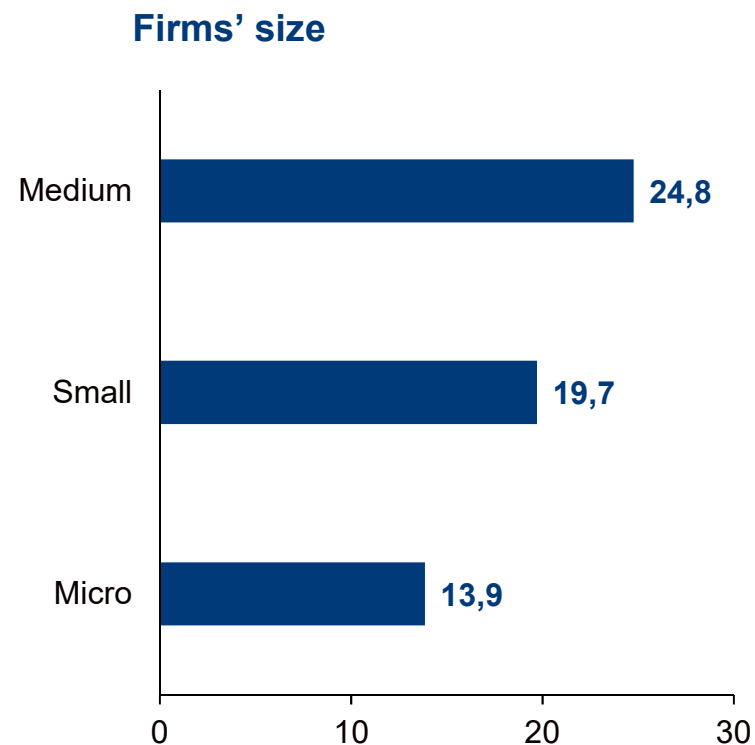
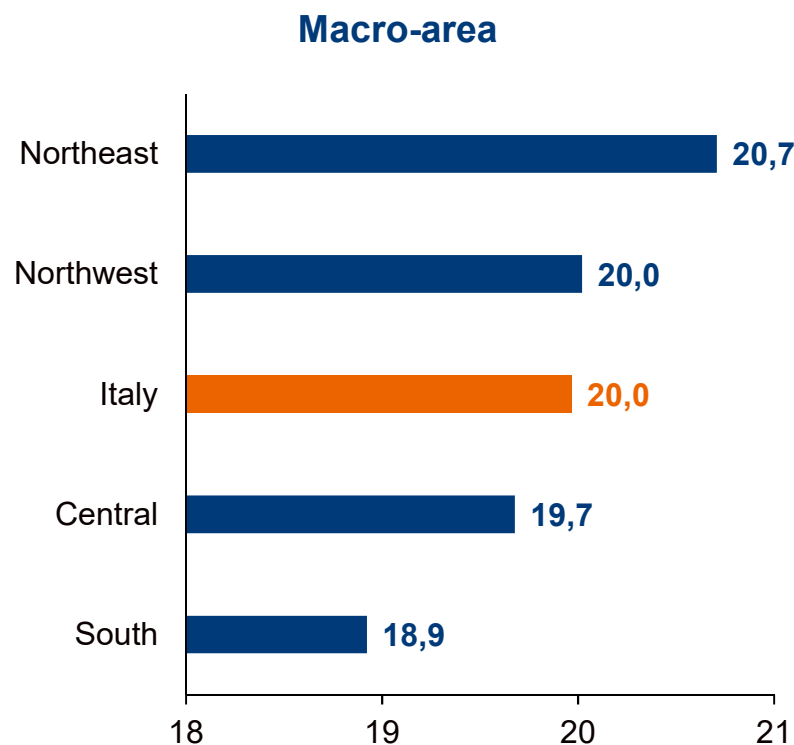
- Better employment trend in 4.0 firms
- Better employment trend in firms NOT using 4.0 technologies

Source: Intesa Sanpaolo

After 4.0 investments, only 20% of Italian firms have reviewed internal organization and have trained the staff

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Firms which after 4.0 investments have reviewed internal organization and have trained the staff (%)

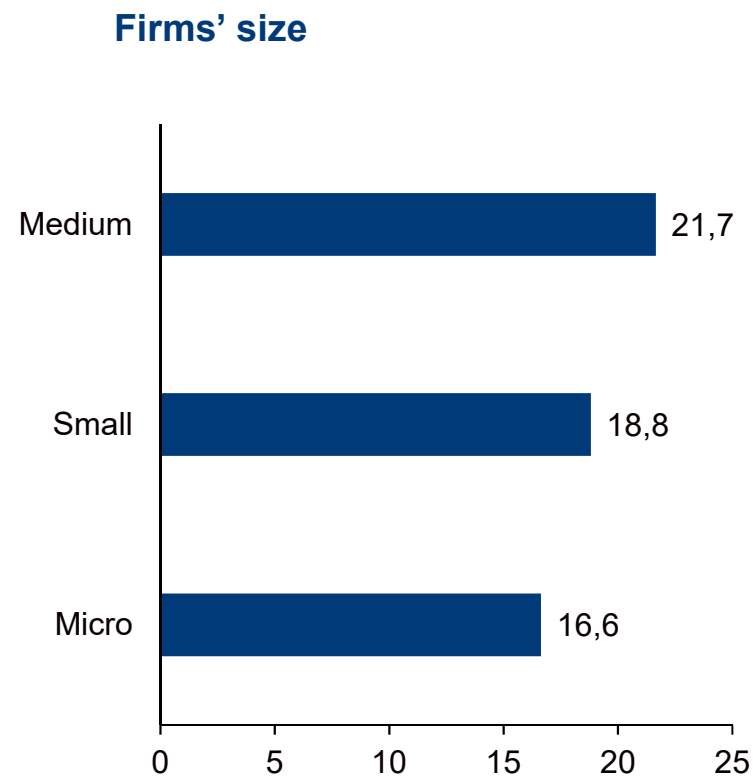
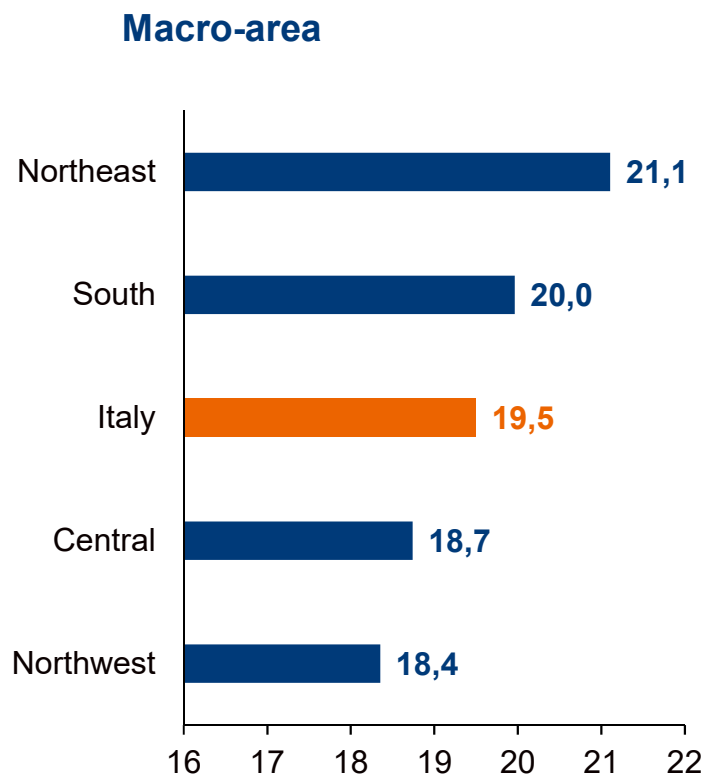


Source: Intesa Sanpaolo

Only 19,5% of firms are trying to improve digital competences during 2018 ...

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Firms trying to improve digital competences during 2018 (%)

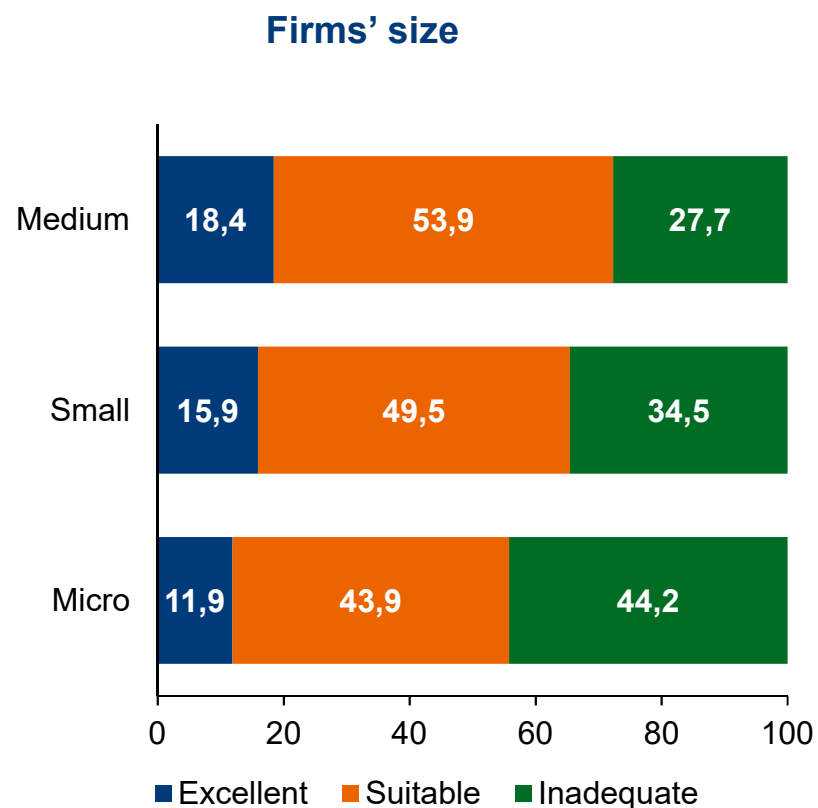
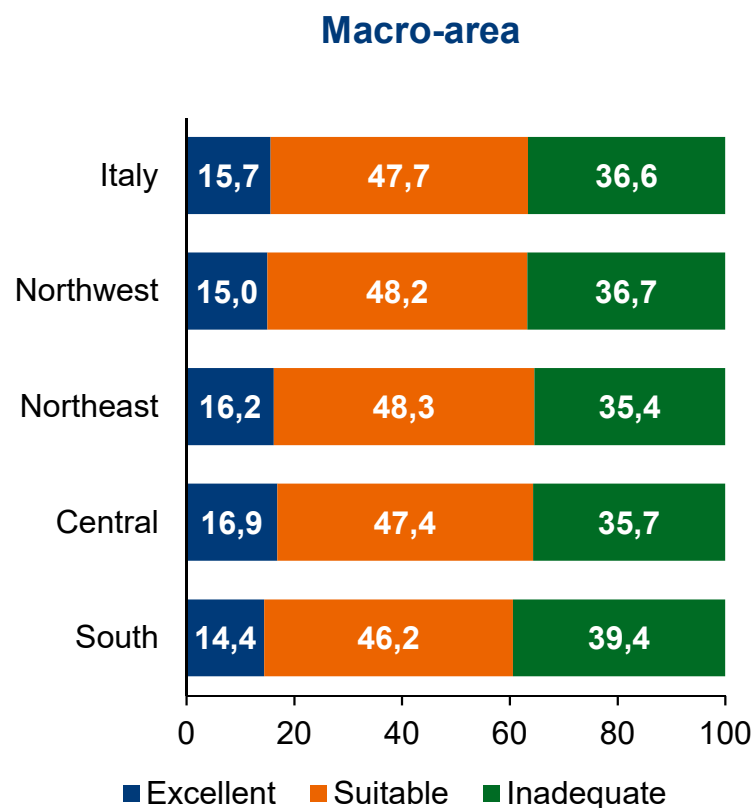


Source: Intesa Sanpaolo

... even if more than one-third of Italian firms show inadequate digital competencies

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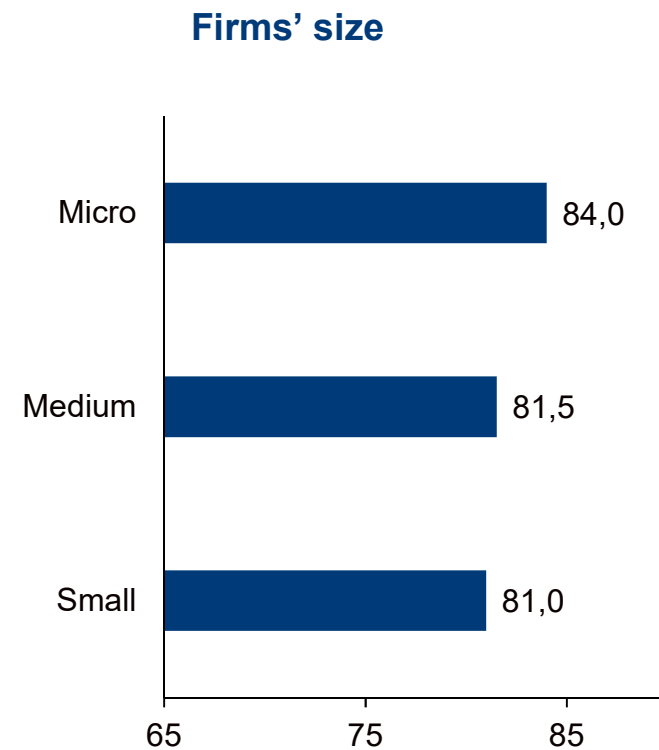
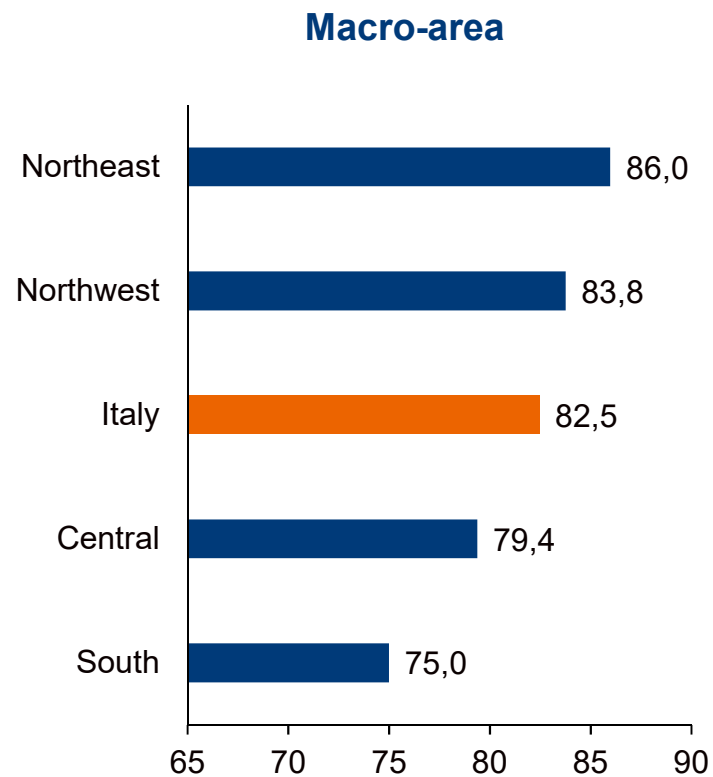
Breakdown by digital competences (%)



Source: Intesa Sanpaolo

It's difficult to find 4.0 competencies on the job market

Manufacturing: firms with difficulties in finding specialised 4.0 workers
(% of answers; excluding «I don't know»)



Source: Intesa Sanpaolo

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How many Italian firms produce 4.0 machineries?

- **Between the end of 2016 and the first half of 2017 we submitted a survey to a sample of mechanical firms.**
- **Interested territories:**
 - ☐ mechanical district of Vicenza,
 - ☐ Lombardia,
 - ☐ Veneto, Trentino-Alto Adige, Friuli-Venezia Giulia,
 - ☐ Toscana, Umbria,
 - ☐ Piemonte, Liguria, Valle d'Aosta.
- **363 companies interviewed.**

Is it possible to repeat the winning postwar model?

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- Italian industry's success is based on **(non-coded) interactions between producers of consumer goods and manufacturers of machineries**, often thanks to territorial contiguity (in industrial districts):

- ☐ Consumer goods firms able to find innovative machineries, also with ad hoc solution.
- ☐ Machinery producers able to introduce new solutions by interacting with domestic customer and, meanwhile, to strengthen their offer on foreign markets.

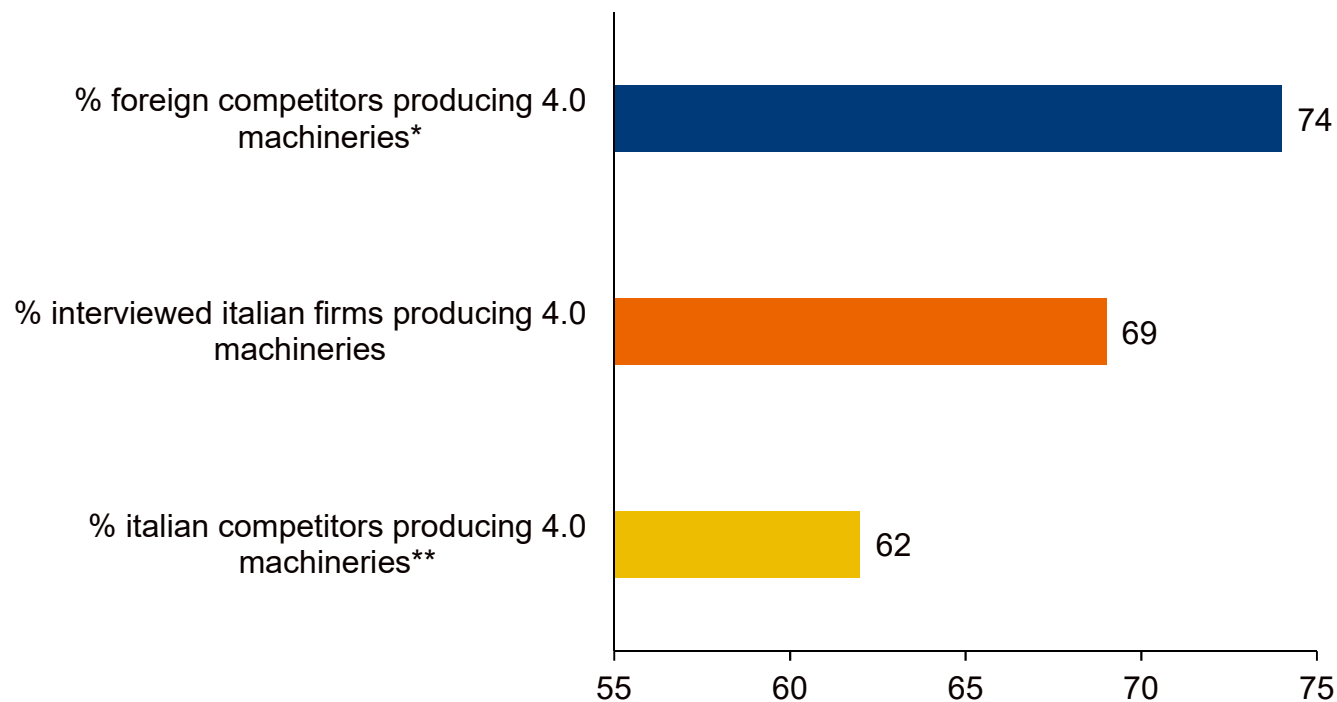
- **With the paradigm 4.0 can the Italian industry replicate this winning model?** Yes, if some conditions are satisfied

- ☐ If a 4.0 machinery offer is available on the territory
- ☐ If non-coded customer-supplier interactions still have a value in a context in which information exchanges become increasingly codified (digital) thanks to Industry 4.0
- ☐ If mechanical firms (nowadays more internationalized) maintain a strong relationship with the domestic customers

Italian mechanical sector is ready to win the challenge

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Share of firms producing 4.0 machineries



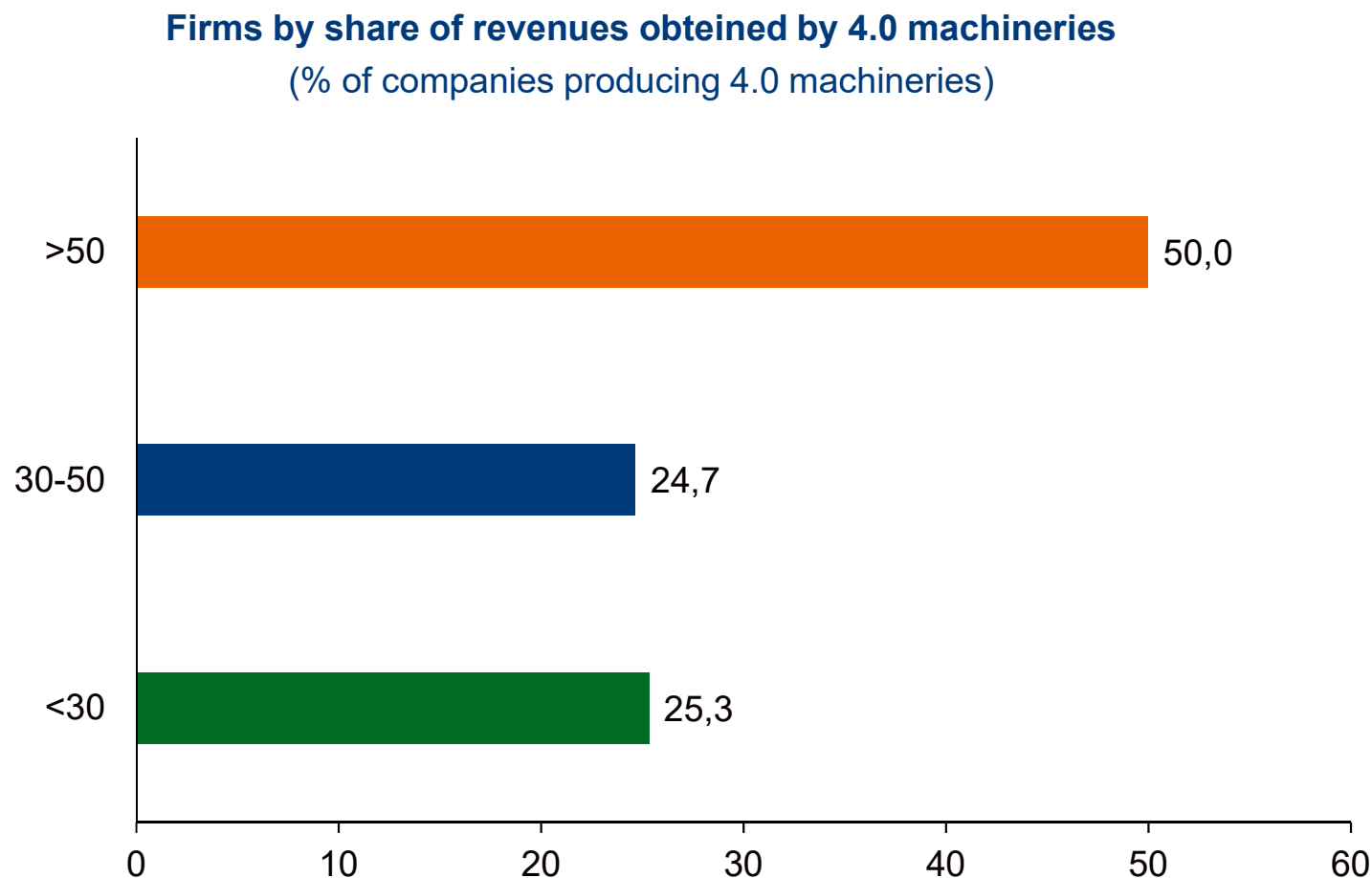
* % Share of foreign competitors mainly producing 4.0 machineries, according to interviewed companies;

** Share of italian competitors mainly producing 4.0 machineries, according to interviewed companies.

Source: Intesa Sanpaolo

Half of the firms realizes more than 50% of the revenues by 4.0 machineries ...

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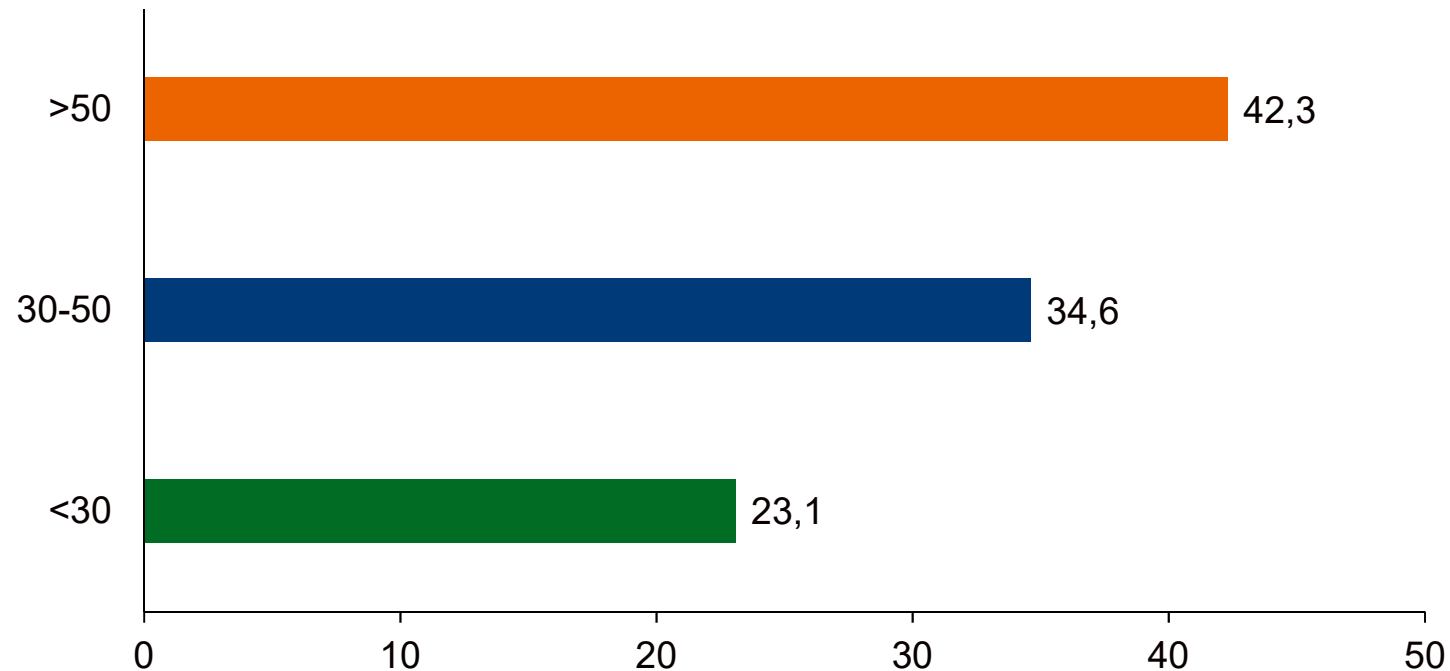
Source: Intesa Sanpaolo

... also thanks to high export propensity

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According to 42.3% of interviewed firms, more than half of revenues from the sales of 4.0 machineries comes from foreign markets.

Firms by share of machineries 4.0 revenues obtained on foreign markets
(as a % of firms producing 4.0 machineries)

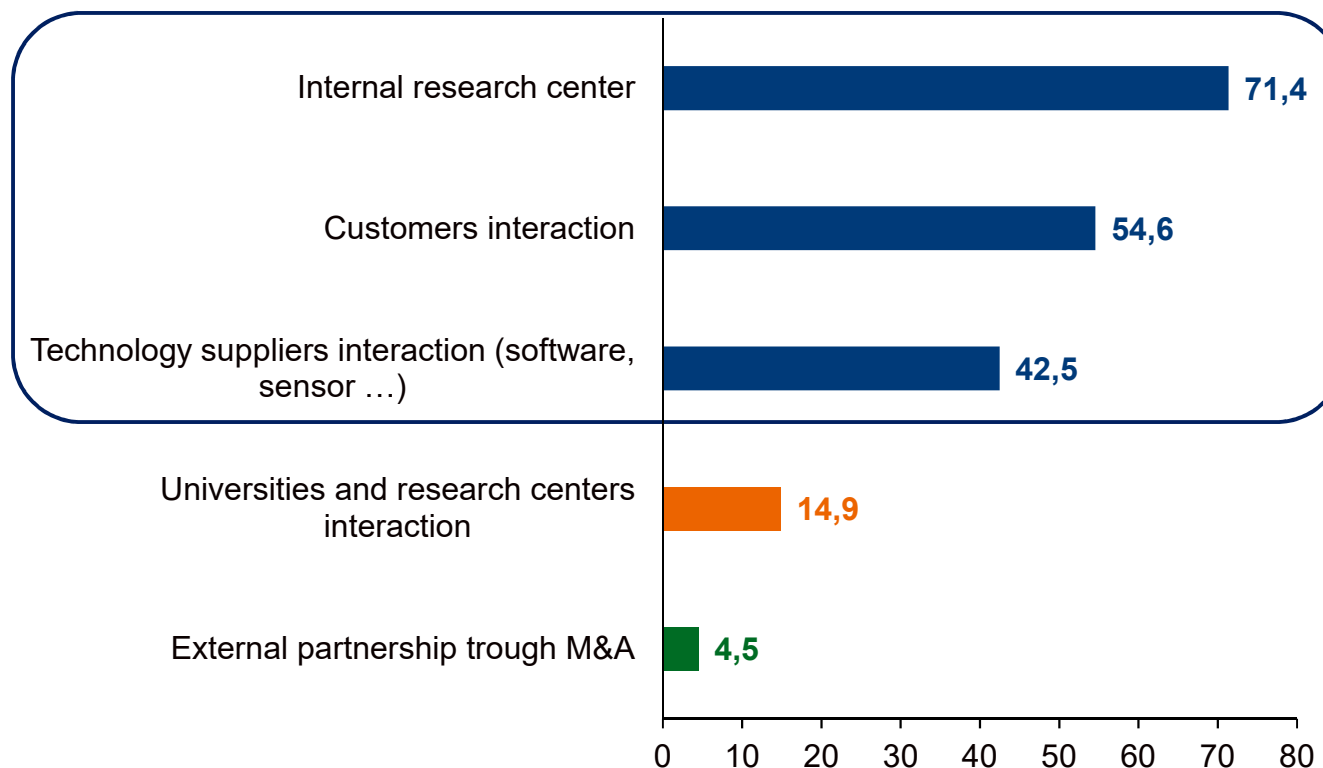


Source: Intesa Sanpaolo

The University has a marginal role. Internal R&D and interactions with suppliers/customers are fundamental ...

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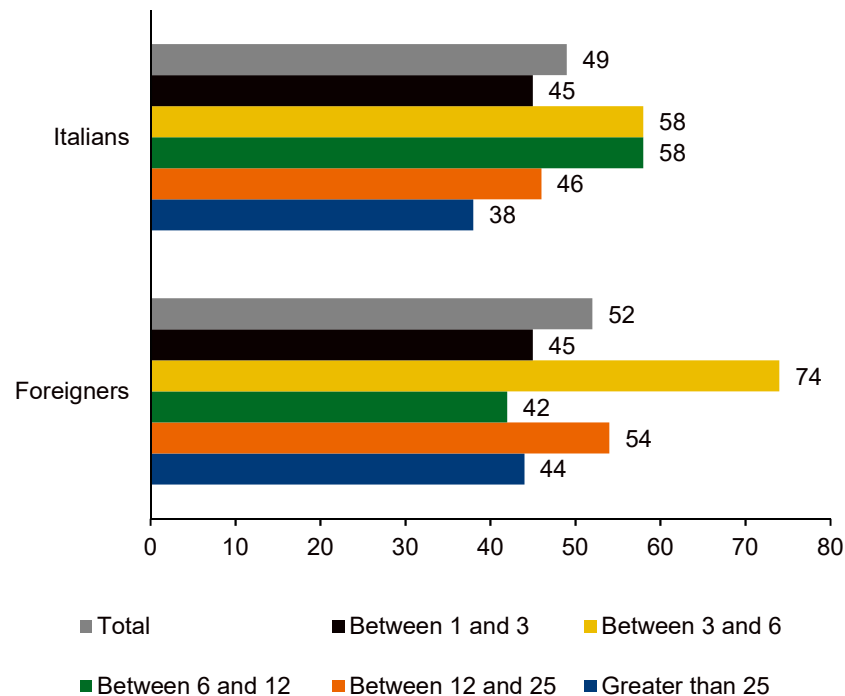
«Very important» factors for the development and the production of 4.0 machineries
(as a % of firms producing 4.0 machineries)



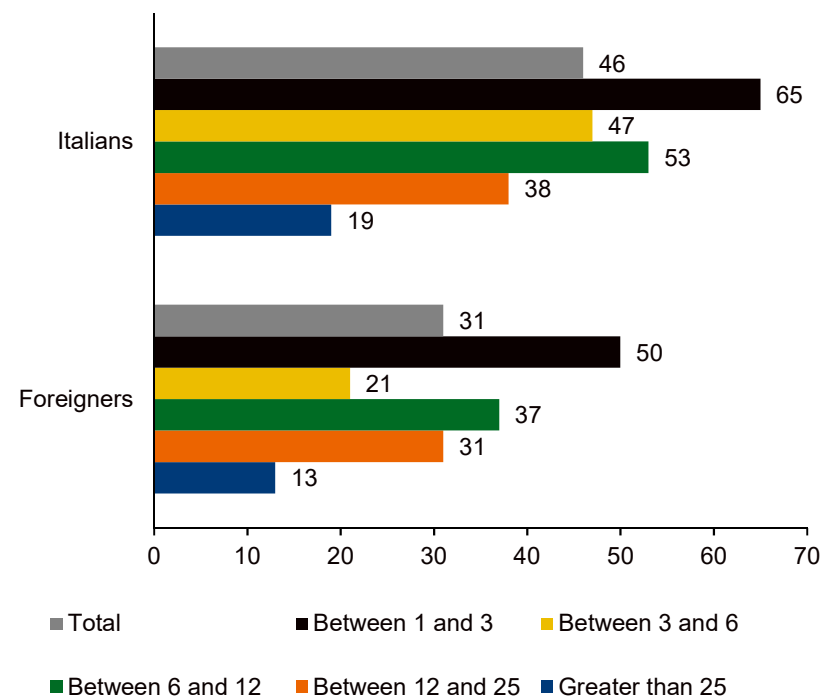
Source: Intesa Sanpaolo

... in Italy and abroad

Firms considering the interaction with Customers «very important» for the development and the production of 4.0 machineries (as a % of firms producing 4.0 machineries), **by firm size** (revenues in million of euros) and **nationality of Customers**



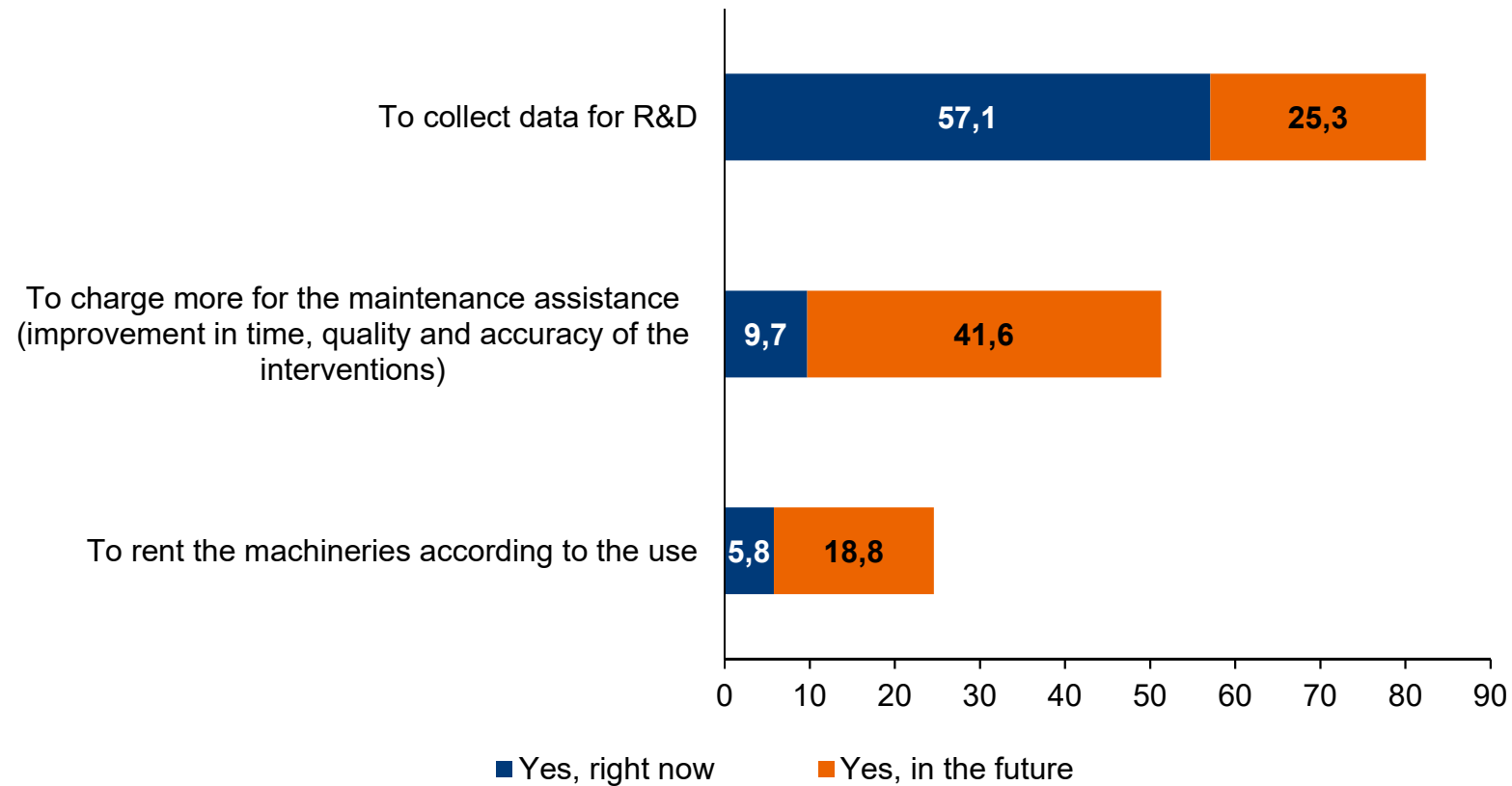
Firms considering the interaction with Suppliers «very important» for the development and the production of 4.0 machineries (as a % of firms producing 4.0 machineries), **by firm size** (revenues in million of euros) and **nationality of Suppliers**



Source: Intesa Sanpaolo

New opportunities and businesses for 4.0 producers

The production of 4.0 machinery allows the firm to:
(as a % of firms producing 4.0 machineries)



Source: Intesa Sanpaolo

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- **I risultati riportati nella sezione dedicata alla DOMANDA di macchinari 4.0 si basano su una serie di interviste**, condotte dalla Direzione Studi e Ricerche di Intesa Sanpaolo, rivolte a direttori, coordinatori e gestori delle Filiali Imprese di Banca dei Territori di tutto il territorio nazionale, con l'obiettivo di **valorizzare la conoscenza e le informazioni presenti sul territorio**.
- Le interviste sono state effettuate in due momenti differenti:
 - **Febbraio 2018**. Hanno risposto 2.078 persone. 1.800 hanno compilato tutto il questionario; mentre 278 hanno ritenuto di non completarlo dato che nei due mesi precedenti l'indagine il loro portafoglio è cambiato significativamente. Le risposte fornite riguardano circa 127.500 imprese clienti.
 - **Giugno-luglio 2018**. Hanno risposto 2.099 persone. 1.958 hanno compilato tutto il questionario; 141 no perché negli ultimi due mesi precedenti l'indagine il loro portafoglio è cambiato significativamente. Le risposte fornite fanno riferimento a circa 146.500 imprese clienti.

■ **Le risposte dei gestori appartenenti al campione sono state ricondotte a tre classi dimensionali di imprese**

- **Micro:** imprese con fatturato inferiore a 10 milioni di euro, complessità della struttura finanziaria bassa e rapporto export/fatturato inferiore al 10%.
- **Piccole:** imprese con fatturato inferiore a 10 milioni di euro, ma complessità della struttura finanziaria media o export su fatturato maggiore del 10%, oppure le imprese con fatturato tra i 10 e i 50 milioni di euro, finanziamenti accordati a sistema minori di 20 milioni di euro e struttura finanziaria non complessa o export/fatturato inferiore al 25%.
- **Medie:** imprese con fatturato superiore a 150 milioni di euro, o compreso tra i 10 e i 150 milioni di euro, ma totale dei debiti erogati dal sistema bancario maggiore di 20 milioni di euro o struttura finanziaria molto complessa (leasing accordati a sistema e affidamenti a medio/lungo termine maggiori a 5 milioni di euro) o rapporto export su fatturato maggiore del 25%.
- Nessuna delle risposte ricevute interessa le aziende di grandi dimensioni (con fatturato annuo superiore a 350 milioni di euro).

- **I risultati riportati nella sezione dedicata all' OFFERTA di macchinari 4.0 si basano su un'indagine realizzata ad hoc** dalla Direzione Studi e Ricerche di Intesa Sanpaolo, tramite la rete di gestori imprese di Banca dei Territori.
- L'indagine è stata condotta in tre momenti diversi:
 - **Dicembre 2016**: imprese del distretto della meccanica strumentale di Vicenza;
 - **Gennaio 2017**: imprese della meccanica lombarda;
 - **Maggio 2017**: imprese di Veneto (a integrazione di quanto monitorato a dicembre), Piemonte, Liguria, Toscana, Umbria, Friuli Venezia Giulia e Trentino Alto Adige.
- Le imprese contattate sono state 626 a fronte delle quali sono stati **restituiti 363 questionari compilati** corrispondenti a un tasso di risposta del 58%.

■ **Le imprese oggetto di analisi sono state selezionate secondo i seguenti criteri:**

- ☐ appartenenza ai comparti della meccanica interessati dalla produzione di beni incentivabili;
- ☐ fatturato 2015 superiore a 2 milioni di euro (da 1 a 2 milioni se l'azienda dispone di brevetti e conta più di 10 addetti) e inferiore ai 350 milioni di euro;
- ☐ aziende non in stato di sofferenza, credito problematico, incaglio o in liquidazione;
- ☐ appartenenza a classi di rating “non rischiose”;
- ☐ EBITDA 2015 superiore al 4%;
- ☐ variazione del fatturato tra 2013 e 2015 superiore al -10%;
- ☐ variazione del fatturato tra 2008 e 2015 superiore al -30%.