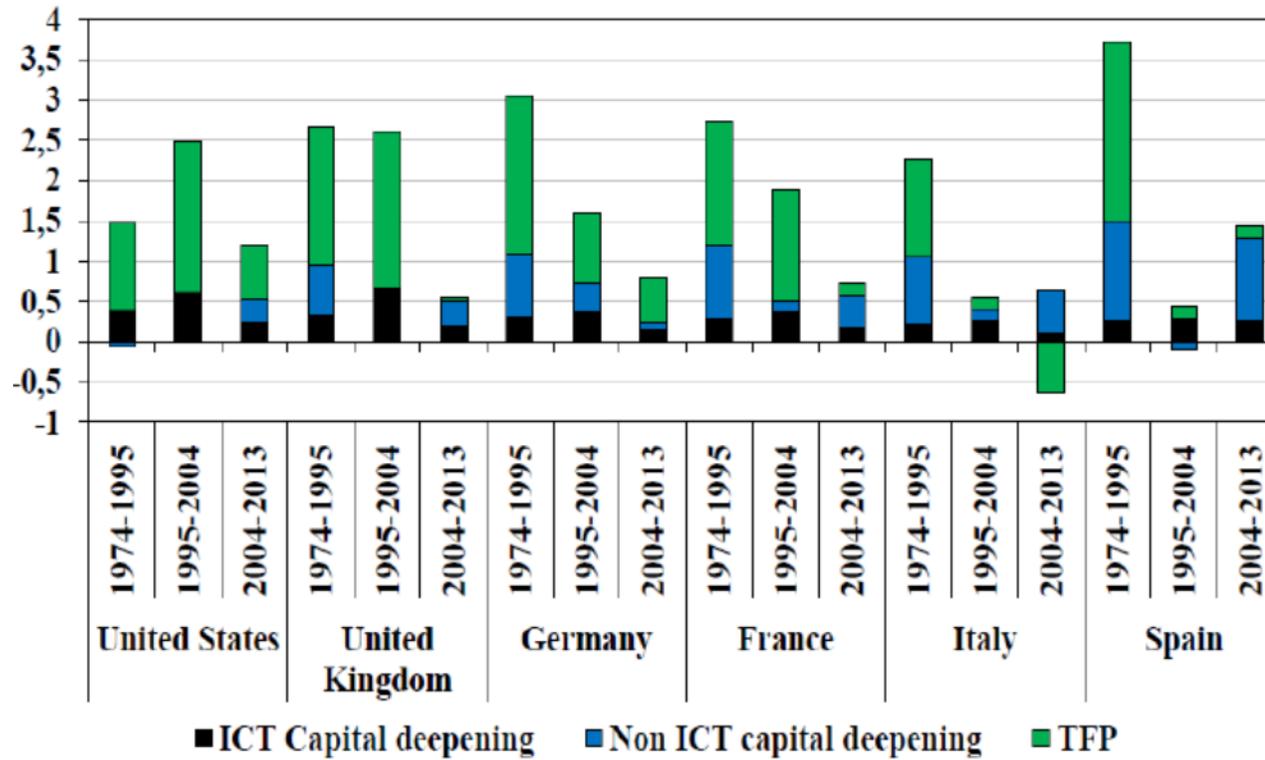
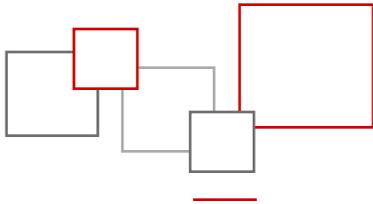


Automation, digitalization and employment in France

Productivity growth and contribution of ICT capital

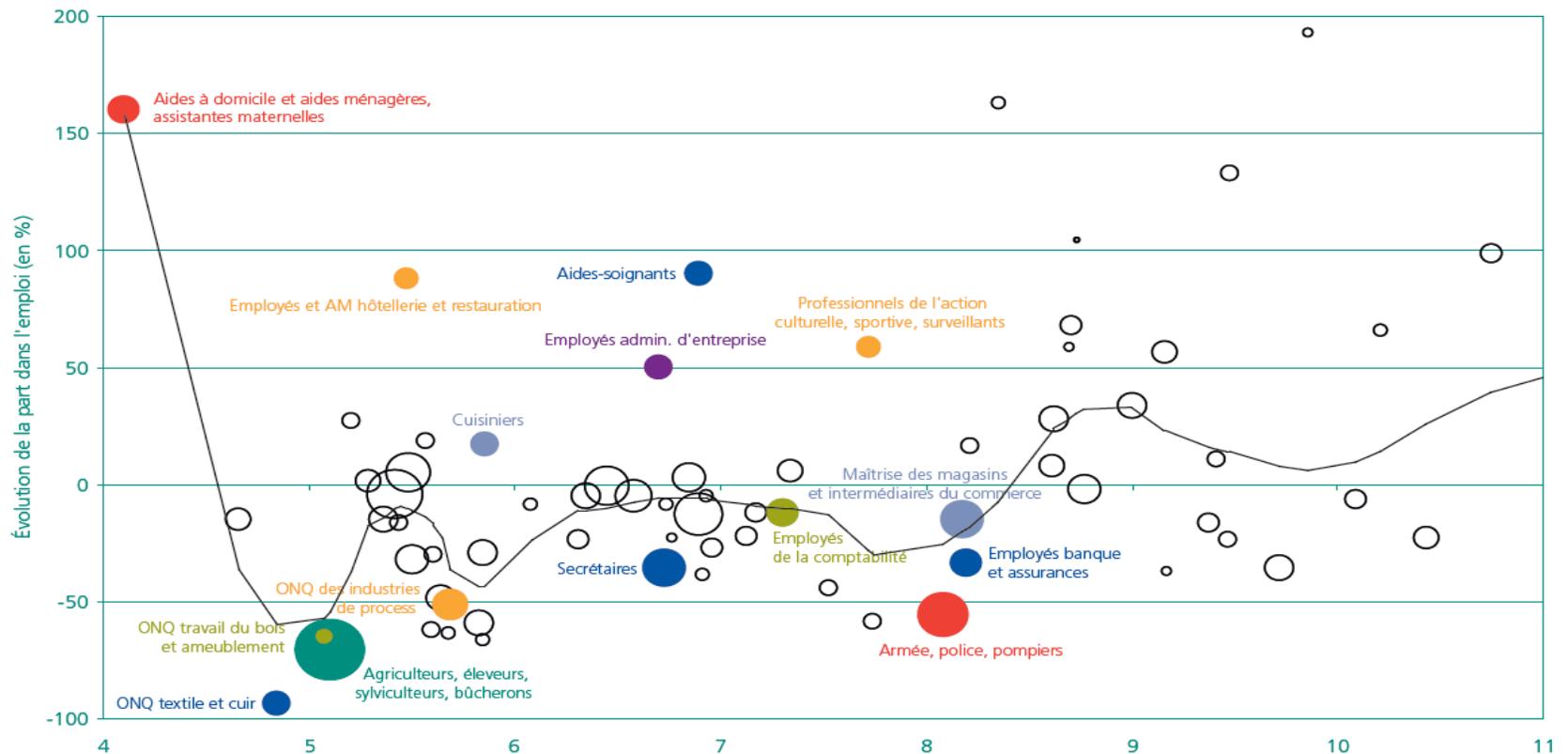


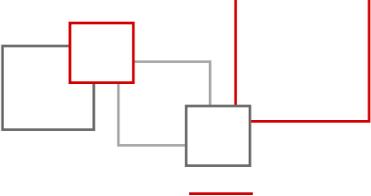


Job structure

Jobs as a share of total employment between 1982-1984 and 2010-2012, by qualification

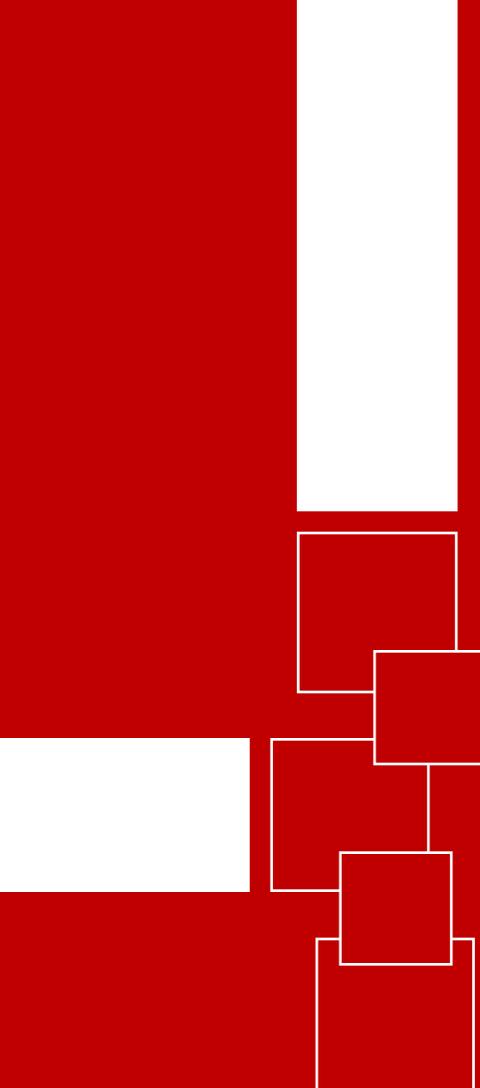
(estimated from the average hourly wage in 1990-1992, euros)



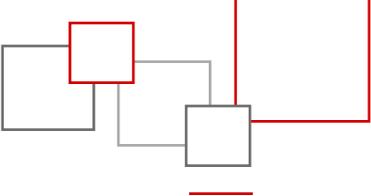


Previous studies

Study	Analysis level	Data	Timescale	Percentage of jobs at high risk
Roland Berger (2014)	Professions	French job structure (INSEE)	Medium/long-term (10-15 years)	42%
Arntz, Gregory, Zierahn (2016)	Individual (tasks)	PIAAC	Medium/long-term (10-15 years)	9%

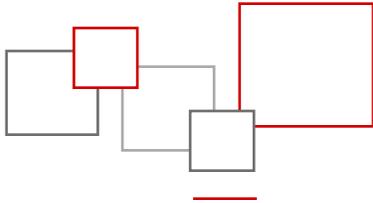


Our study : method, main findings



Previous prospective studies : main findings, main limits

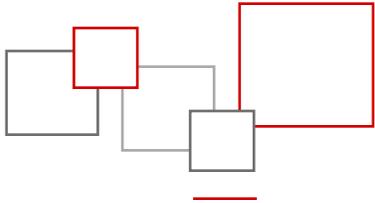
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Our Study : method

- Data used: Working conditions survey
 - Individual data on working conditions *as perceived by each worker*
 - Possibility to appreciate the variability of the content of work between people having the « same » job
 - Based on the answers given by employees participating in the Working Conditions survey, the study put together a job automation index for each individual. This study aggregated the four factors identified by recent economic literature as determining a given job's vulnerability to automation under current technological conditions: flexibility, capacity to deal with unknown situations, capability of resolving problems, and social interactions. In addition to these factors, there is precision, identified as a major bottleneck for manual jobs.
- Selection of variables depending on economic sector and type of occupation

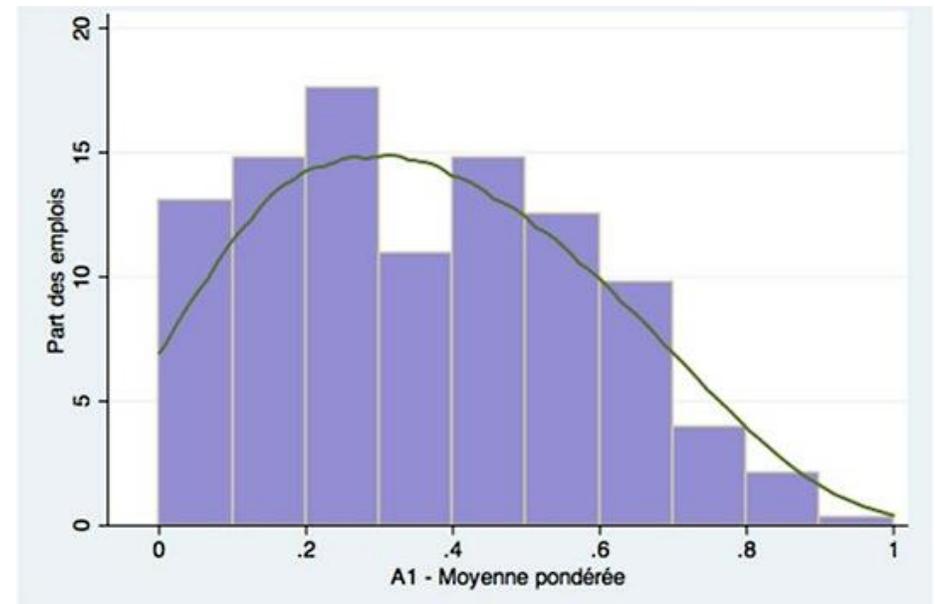
	Manufacturing (Agriculture, Industry, Construction)	Services
Manual workers	Flexibility, social interactions, capacity to solve problems, adaptability, Perception	Flexibility, social interactions, capacity to solve problems, adaptability, Perception
Non manual workers	Flexibility, social interactions, capacity to solve problems, adaptability	Flexibility, social interactions, capacity to solve problems, adaptability



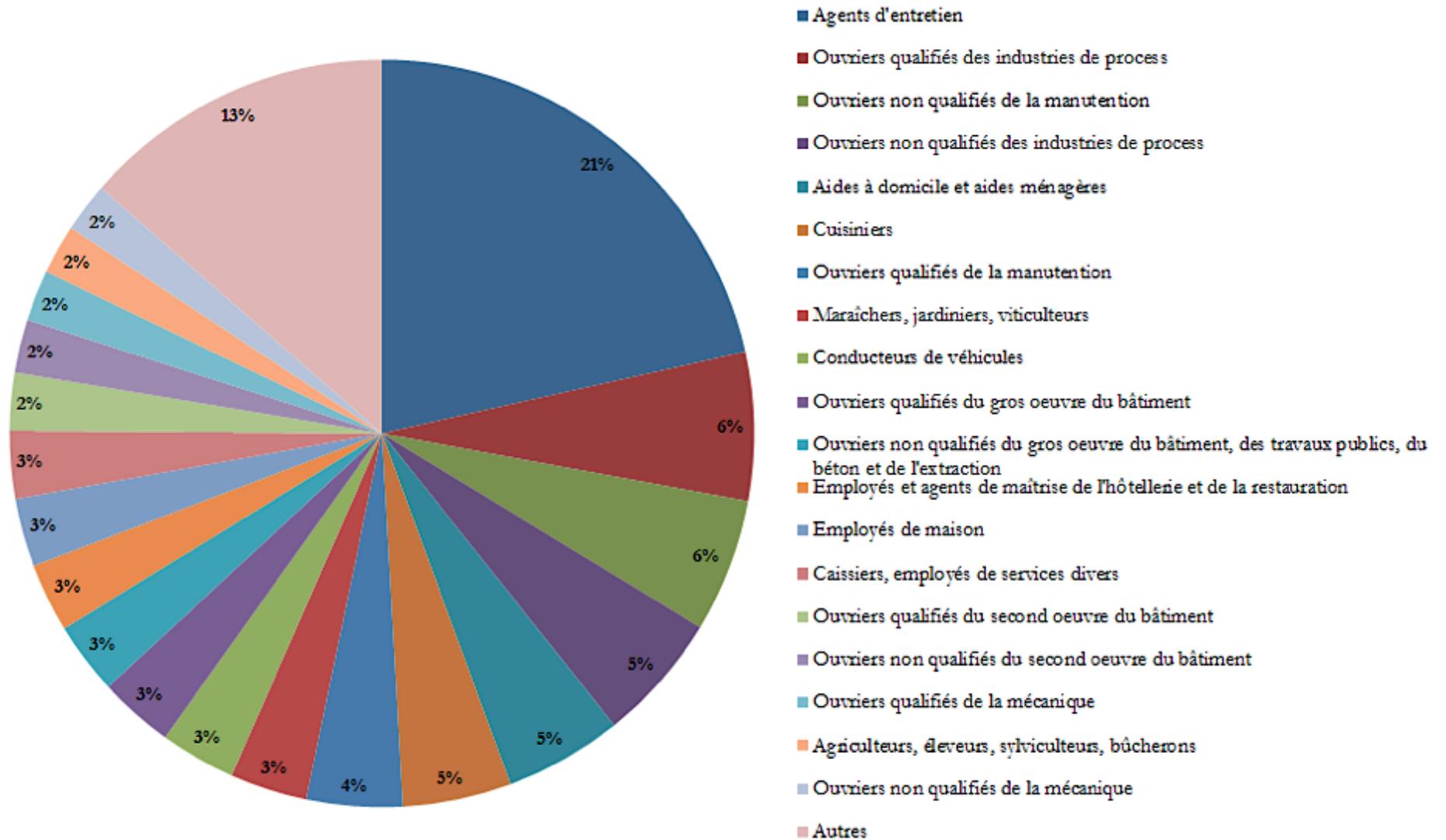
Findings

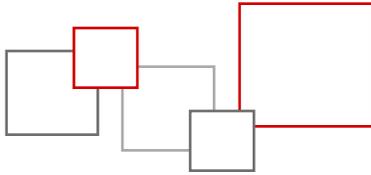
- less than 10% of existing jobs are subject to cumulative vulnerabilities liable to threaten their existence due to automation and digitalisation;
- but half of existing jobs are liable to change in terms of content, from significantly to very significantly;
- technological advances should continue to favour qualified and highly qualified jobs: of those that may be vulnerable, over-represented professions with respect to volume or their percentage of total employment, are often non-skilled or low-skilled jobs

% vulnerable jobs	% jobs liable to change
Less than 10 %	About 50 %



Vulnerable jobs





Jobs liable to a profound transformation

