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Surveying Performance Management Practices in Canada

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Telling Canada's
story in numbers

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Practices Survey Workshop



Outline

- Measuring performance management in Canada
 - History of surveys of business strategy in Canada
 - Measuring performance management practices
 - Content development
- Frame and sample for Survey of Innovation and Business Strategy (SIBS)
- Review of survey responses to performance management practices (manufacturing and other sectors)
- Use of microdata from SIBS
- References

Surveying business strategy and performance management in Canada

- History of business strategy surveys at Statistics Canada
 - Workplace and Employee Survey (WES) [1999-2006]
 - Survey of Knowledge Management Practices [2001 pilot survey]
 - Survey on the Commercialization of Innovation [2007]
 - Survey of Innovation and Business Strategy (SIBS) [2009, 2012 and 2017]
 - Survey of Intellectual Property Management (SIPM) [2010]
 - Survey of Advanced Technology (SAT) [2014]
- SIBS content development with partners
 - Federal departments and agencies
 - Industry Canada/Innovation, Science and Economic Development; Finance Canada; Department of Foreign Affairs/Global Affairs Canada, Atlantic Canada Opportunities Agency (regional development); Statistics Canada
 - Provincial governments



Measuring performance management practices

- Module within the Survey of Innovation and Business Strategy (SIBS), 2009 and 2012
- Content development
 - Performance management practices content based on input from:
 - Industry Canada (now Innovation, Science and Economic Development)
 - Academics (work of Nicholas Bloom and John Van Reenen)
- Content was tested in 2009 using standard questionnaire testing practices for business surveys
- The 2009 questionnaire was used again, without change for 2012



Performance management measures

- Response rate to SIBS survey was 60% in 2012; 71% in 2009
- Question flow in production performance management module
 - All Q52 – systematic process to resolve problems with production of goods or delivery of services
 - All Q53 – number of performance management indicators monitored by enterprise
 - If Q53 = 0 then skip to Q60
(80% of respondents in manufacturing, 60% of respondents in other industries reported measures > 0)
 - Q54/55 – Frequency that key production performance indicators are shown to managers / workers
 - Q56 – Frequency of review of key production performance indicators by management
 - Q57 – Who decides the pace of work to achieve performance targets
 - Q58 – Time frame for targets
 - Q59 – Who is rewarded for target achievement
- All Q60 and 61 on promotion and performance management



Frame and sample for SIBS 2012

- Population for survey
 - Enterprises with threshold of 20 employees and \$250,000 in revenues
 - Cross economy by selected sectors
 - Agriculture, forestry, fishing and hunting [11]
 - Mining, quarrying, and oil and gas extraction [21]
 - Utilities [22]
 - Construction [23]
 - **Manufacturing [31-33]**
 - Wholesale trade [41]
 - Retail trade [44-45]
 - Transportation and warehousing [48-49]
 - Information and cultural industries [51]
 - Finance and insurance [52]
 - Real estate and rental and leasing [53]
 - Professional, scientific and technical services [54]
 - Management of companies and enterprises [55]
 - Administrative and support, waste management and remediation services [56]



Frame and sample for SIBS, 2012

- Population for survey
 - Size (based on employment)
 - Small = 20 to 99 employees
 - Medium = 100 to 249 employees
 - Large = 250 or more employees
 - Sub-national geographies (selected regional development agency or provincial partners)
 - Atlantic Canada
 - Quebec
 - Ontario
 - Alberta
 - Rest of Canada



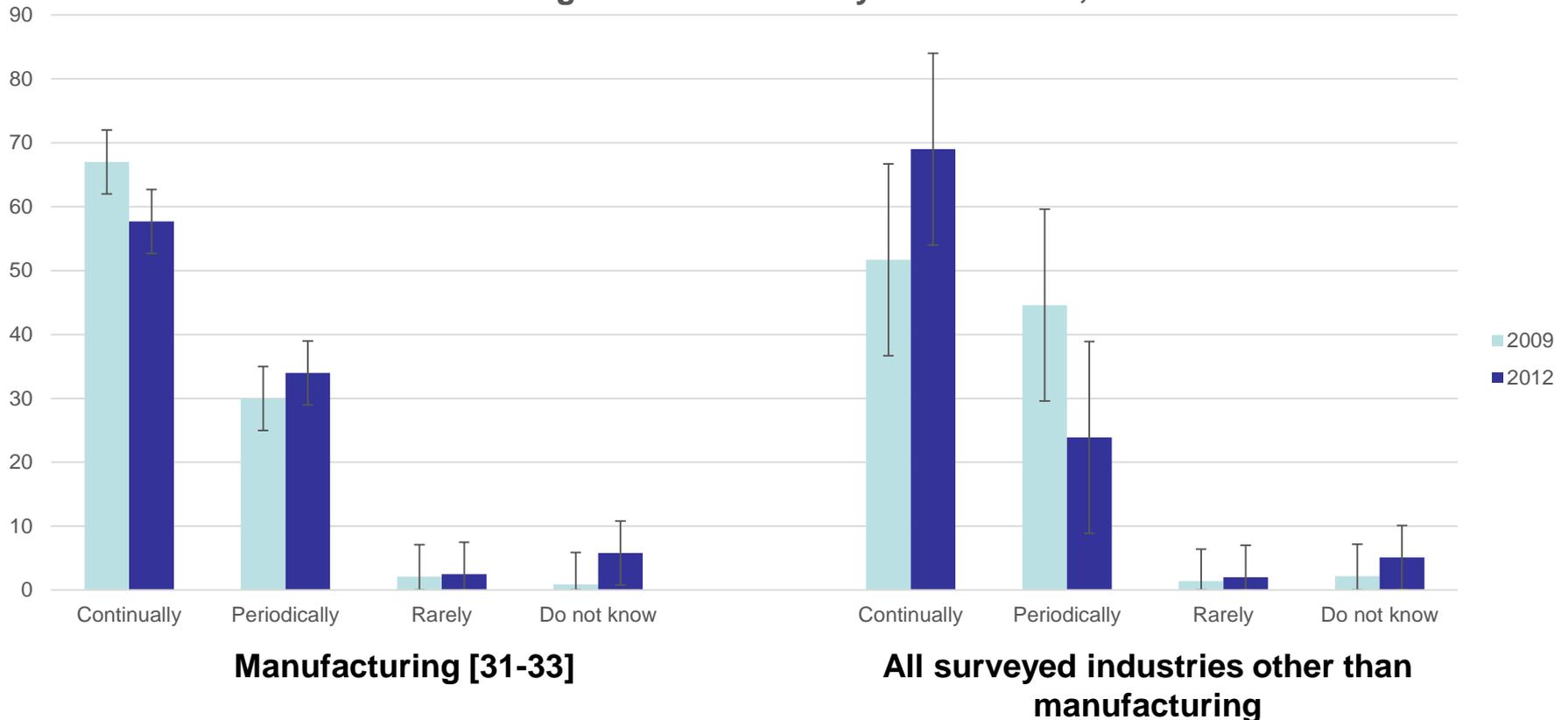
Estimates and Quality for performance management questions and selected human resources questions, 2009 compared with 2012

- Performance management practices module responses (Q52 to Q59)
 - Quality flags for estimates for Manufacturing are very good in both cycles and cycle to cycle comparisons of multiple measures are consistent
 - For service industries (NAICS 41 to 56) and all other selected NAICS in the survey (NAICS 11 to 23) estimates are more variable between the two cycles and quality flags are lower across all follow-up questions (Q54 to Q59)
- Human resource questions of interest (Q60 and 61)
 - Responses to these questions were generally higher quality and more consistent across the two cycles and across industry sectors



Performance management measures

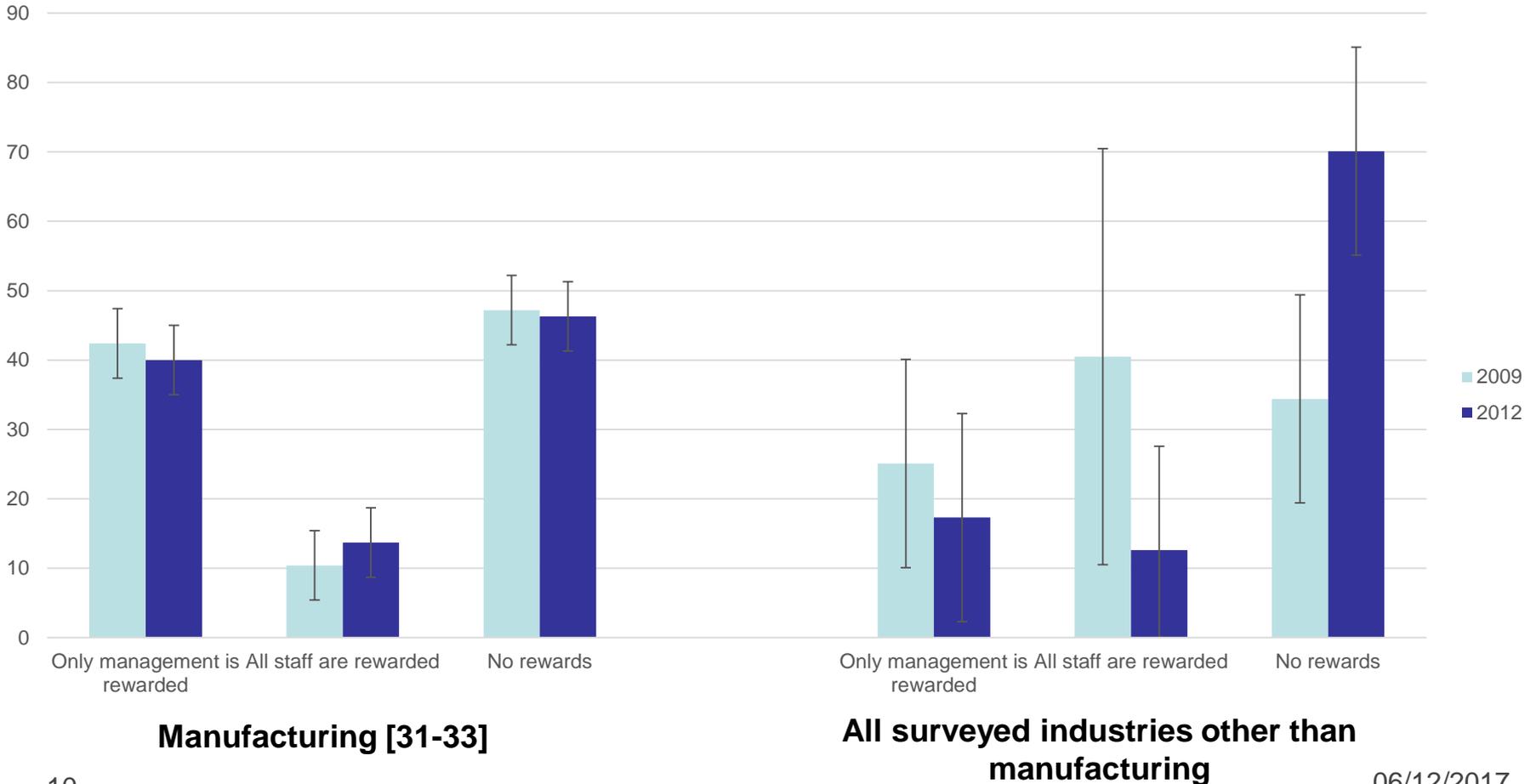
Frequency of management review of key production performance indicators, manufacturing vs all other surveyed industries, 2009 and 2012





Performance management measures

Rewarding production performance target achievement, manufacturing vs. all other surveyed industries, 2009 and 2012





Survey of Innovation and Business Strategy, 2017

- Questions on management practices have been removed
 - To shorten the questionnaire to reduce response burden
 - To shift the focus to questions (innovation, global value chain and business strategy) which are relevant to all businesses rather than questions which are best suited to surveys of the manufacturing sector
 - Market context – scope and characteristics of business's market
 - Innovation – using Oslo Manual concepts
 - Business strategy – addressing priority policy issues relating to competitiveness
 - Global value chain – addressing data needs for policy relating to trade
 - Relationships between these elements across most of the business sector



Content changes for 2017

2009 and 2012 questionnaire

- **Business strategies and monitoring (Q1-8)**
- **Enterprise structure (Q9-13)**
- *Operational activities (Q14-20)*
- *Relocation of business activities from Canada to another country (Q21-28)*
- **Relocation of business activities into Canada (Q29-31)**
- **Sales activities (Q32-37)**
- *Changes to business practices (Q38)*
- *Relationship with main suppliers (Q39-43)*
- **Advanced technology use (Q44-45)**
- **Process innovation (Q46-51)**
- *Production performance management practices (Q52-59)*
- *Human resource management practices (Q60-64)*
- **Organizational innovation (Q65-68)**
- *Highest selling good or service and main market (Q69-81)*
- **Product innovation (good or service) (Q82-93)**
- **Marketing innovation (Q94-97)**
- **Use of government support programs for innovation related activities (Q98-99)**
- *Measures/activities implemented to mitigate obstacles to innovation (Q100)*
- **General questions (Q101-102)**

2017 questionnaire

- **Business strategy (Q1-Q6)**
- Main market and competitive landscape (Q7-10)
- Main geographic market (Q11-16)
- **Innovation (Q17)**
- **Good or service innovation (Q18-20)**
- **Process innovation (Q21-22)**
- **Organizational innovation (Q23)**
- Expenditures on innovation activity (Q24-26)
- **Cooperation for innovation (Q27-30)**
- Innovation with environmental benefits (Q31-32)
- **Use of government support programs for innovation related activities (Q33-34)**
- Obstacles (Q35-38)
- **Advanced technology use (Q39-41)**
- Business practices (Q42)
- Imports and exports (Q43-45)
- Obstacles to exports (Q47)
- Purchased goods or services (Q48-52)
- **Business structure and ownership (Q53-54)**
- Employment in Canada and abroad (Q55-58)
- **Locating activities into Canada (Q59-61)**
- **Sales (Q62-65)**
- **Comments and feedback (Q66-67)**



Access to SIBS and other microdata

- SIBS and other Statistics Canada survey data can be linked together, and linked (cross-section and longitudinally) to administrative data from inside and outside of government. For example,
 - Research and Development in Canadian Industries
 - Corporate tax returns from the Canada Revenue Agency
 - Firm income statements and balance sheets
 - Payroll and employment data
 - Patent data from both Canadian and U.S. patent offices
- External researchers can access these files through the Canadian Centre for Data Development and Economic Research (www.statcan.gc.ca/cder)

Some selected findings

- Following Bloom and van Reenen (2007), studies have created an index of management practices (MP) using 19 indicators of production and HR management
 - MP increases the impact of R&D investment on TFP at the firm-level, Tang and Wang (2018)
 - MP has a pronounced effect on a company's ability to innovate, but only has an economically small impact on firm performance (sales or profits per employee), Rosa (2018)
 - Larger firms, firms with a higher percentage of workers with university degrees, head office in US tend to have higher MP, Ershov and Brouillette (2014).
 - Controlling for other characteristics, MP is positively correlated with sales and profits, and the propensity to innovate, Ershov and Brouillette (2014).

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- Survey information
 - [SIBS](#) survey information
- CANSIM tables for SIBS 2009 and 2012
 - 358-0221 to 358-0335; [concordance \(questionnaire to tables\)](#)