

6 April 2015

Backgrounder on the Question in the *Business Outlook Survey* Concerning the Intensity of Labour Shortages

Starting with the 2015 spring survey, the results from a question on the intensity of labour shortages are being included in the *Business Outlook Survey* (BOS). This backgrounder briefly describes the question and presents the correlations between the responses and various measures of pressures on production capacity and labour market conditions.

Results from the BOS are part of the information set used at the Bank of Canada to assess capacity pressures in the Canadian economy. While firms' responses concerning their ability to meet an unexpected increase in demand track cyclical movements in GDP relatively well, their responses regarding labour shortages are useful for gauging the amount of slack in the labour market. The question asking whether a firm is facing any labour shortages that restrict its ability to meet demand has been part of the survey since it began in 1997. Starting in 2001, another question was included to better assess the evolution of labour shortages, asking firms whether labour shortages are generally more intense, less intense or about the same intensity compared with 12 months ago. The responses are expressed as a balance of opinion, obtained by subtracting the percentage of firms answering "less intense" from the percentage responding "more intense."

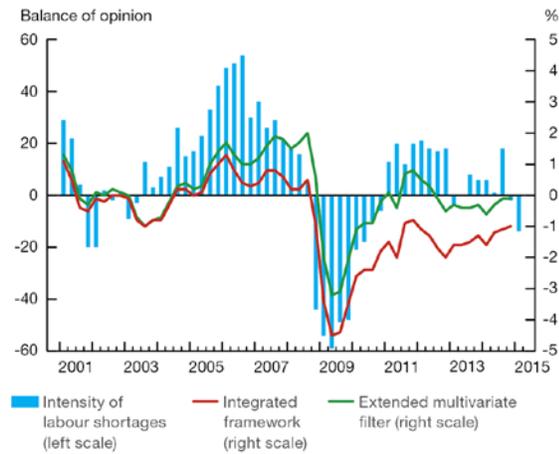
To assess the extent to which this information indicates capacity pressures, the balance of opinion is compared with indicators of labour market conditions—the unemployment rate and the Bank's labour market indicator (LMI)—as well as both the structural and statistical estimates of the output gap—the integrated framework (IF) and the extended multivariate filter (EMVF).¹ **Chart 1** shows that the balance of opinion on the intensity of labour shortages tracks the two measures of the output gap (panel a) and the indicators of labour market conditions (panel b) relatively well over time. The correlation analysis presented in **Table 1** provides further evidence of significant co-movements between the responses to the question on the intensity of labour shortages and measures of the output gap. The balance of opinion is also correlated with the unemployment rate and the LMI. In addition, compared with the other two indicators of capacity pressures included in the BOS, responses to the question on the intensity of labour shortages seem to provide insights that are slightly more forward looking, since the highest correlations are obtained one quarter ahead.

¹ These indicators are available on the Bank's website at <http://www.bankofcanada.ca/rates/indicators/capacity-and-inflation-pressures/>.

Given the considerable uncertainty around any point estimate of the output gap, the Bank monitors a wide range of indicators when assessing the extent of pressures on capacity, including results from the BOS question on the intensity of labour shortages. The Bank has often referred to the intensity of labour shortages in the BOS, since it helps to inform firms' overall assessment of the severity of the shortages. The correlation analysis presented in this backgrounder shows that firms' responses also help the Bank to better gauge current and prospective capacity pressures and their implications for inflation. Thus, responses to the question on the intensity of labour shortages are now available to the public, together with the other indicators of pressures recently added to the Bank's website.

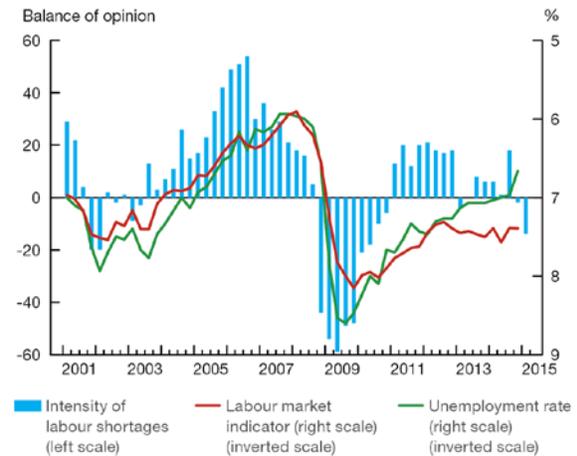
Chart 1: Business Outlook Survey responses on the intensity of labour shortages

a. Compared with measures of the output gap



Source: Bank of Canada calculations

b. Compared with indicators of labour market conditions



Sources: Statistics Canada and Bank of Canada calculations

Table 1: Correlations between the *Business Outlook Survey* indicators of capacity pressures and both the output gap and labour market indicators

BOS series at time t	Macroeconomic series	Sample: 2001Q1 to 2014Q4				
		t	$t+1$	$t+2$	$t+3$	$t+4$
Labour shortage intensity	Output gap (EMVF)	0.77	0.83	0.76	0.63	0.50
Labour shortage intensity	Output gap (IF)	0.77	0.81	0.74	0.62	0.51
Labour shortage intensity	Unemployment rate	-0.69	-0.83	-0.83	-0.76	-0.69
Labour shortage intensity	Labour market indicator (LMI)	-0.54	-0.68	-0.75	-0.75	-0.75
Labour shortages ^a	Output gap (EMVF)	0.66	0.64	0.48	0.34	0.23
Labour shortages	Output gap (IF)	0.84	0.81	0.68	0.55	0.45
Labour shortages	Unemployment rate	-0.54	-0.58	-0.52	-0.43	-0.37
Labour shortages	LMI	-0.57	-0.64	-0.63	-0.58	-0.55
Ability to meet demand ^b	Output gap (EMVF)	0.78	0.78	0.65	0.49	0.32
Ability to meet demand	Output gap (IF)	0.66	0.64	0.51	0.36	0.21
Ability to meet demand	Unemployment rate	-0.78	-0.82	-0.79	-0.70	-0.55
Ability to meet demand	LMI	-0.70	-0.79	-0.81	-0.77	-0.68

Notes: Peak correlations are in bold. EMVF = extended multivariate filter; IF = integrated framework

a. Percentage of firms reporting labour shortages that restrict their ability to meet demand

b. Percentage of firms indicating that they would experience some or significant difficulty meeting an unexpected increase in demand