University of Waterloo W. H. Cherry

ERROR: Measurement Error – *Deficit outranks jobs in poll*

The first (EM9335) and last (EM9341) of the three newspaper articles reprinted in this Highlight #12 show, in the context of measuring public opinion on how to deal with public debt and unemployment, how sensitive Answer(s) can be to question wording – a *summary* of relevant poll results is given overleaf at the bottom of page HL12.2.

EM9335: The Globe and Mail, September 17, 1993, pages A1 and A4

Deficit outranks jobs in poll

Most voters opt to hang tough

HUGH WINSOR
Parliamentary Bureau

OTTAWA – Although job creation has become a central issue in the election campaign, Canadians don't want government-sponsored solutions if it means increasing the deficit, a new *Globe and Mail*/ComQuest Research Group Poll shows.

Asked to choose between an economic approach that concentrated on deficit reduction and one that stressed training and job programs, even if it means an increase in the deficit, most respondents opted for a hang-tough policy on deficits rather than programs to stimulate the economy.

This caution – expressed in the poll of 1,446 eligible voters taken in the first week of the election campaign – may explain why neither the Liberals nor the New Democrats have been able to make political mileage with their job creation proposals, even though they have targeted the issue that voters say is uppermost in their minds.

A proposed investment of $6-billion over two years to improve municipal infrastructure such as roads, bridges and sewage-treatment and water plants is a part of the economic platform Liberal Leader Jean Chrétien revealed on Wednesday. The New Democrats have also proposed a job-creation plan to stimulate the economy.

But the attitudes expressed in *The Globe* Poll explain why, when they revealed their platform, the Liberals put so much stress on their assertion that their overall program will reduce rather than increase the deficit.

In the sample as a whole, 52 per cent of respondents chose the deficit-cutting option while only 39 per cent chose job creation (a slight hardening of opinion since a *Globe* Poll in March). The rest were undecided.

The survey also showed that people who identified themselves as Liberal supporters are almost evenly divided on the question, with 45 per cent wanting to hang tough on deficit policies and 47 per cent favouring a more interventionist policy.

As might be expected, more Conservative supporters (62 per cent) and Reform Party supporters (72 per cent) want continued emphasis on deficit reduction. Even 38 per cent of the New Democrats opted for deficit cutting over job creation.

Responses on these policy choices were also influenced by region, job status, income level and education. Respondents from Atlantic Canada and Quebec were more disposed toward job creation, as were unemployed respondents. But people with full-time jobs, especially in the upper income and education brackets, were more concerned about the deficit.

The overall results of the poll suggest there is some ambiguity among voters on this issue in the election campaign, an ambiguity that seems related to whether job-creation programs would increase the deficit.

When asked what was the single most important policy or issue that will determine how they would vote on election day, three times as many respondents said unemployment and job-creation policies as cited the deficit. And an even smaller proportion cited taxes, the issue that is usually linked to deficits.

The results suggest that Liberal and NDP strategists have targeted the right election issue, but so far they have had difficulty linking their parties and leaders to it in a positive way, at least during the early part of the campaign. (*The Globe* survey was completed before the Liberals' major platform announcement.)

Conservative Leader Kim Campbell, who has insisted that the deficit must be reduced before jobs can be created, is still outscoring Mr. Chrétien and NDP Leader Audrey McLaughlin in voter perceptions of their ability to manage the economy. When attitudes on the broader economic questions are combined with the specific responses to election issues, the strategic challenge facing the Liberals becomes especially clear. The Liberals will have to do a better job of associating their leader with a non-inflationary job-creation approach in order to make electoral gains.

HOW TO IMPROVE THE ECONOMY

As you probably know, Canada is facing some choices about which directions to take regarding the economy. Which one of the following two approaches is closest to your view?

- The government should invest money in job programs and training to improve the economy, even if it means increasing the deficit, OR
- The government should concentrate on reducing the deficit and leave it to private business and investors to create jobs.

	Invest in jobs	Cut the deficit	Neither	Don't know
All of Canada	39%	52%	6%	3%
Men	32	60	6	2
Women	45	45	6	4
Age: 18-34	44	52	4	1
35-44	36	57	6	1
45-54	37	54	7	2
55-64	43	44	7	7
65+	30	50	11	10
If a federal election were being held today, which one of the following parties would you vote for? (If undecided): Is there a party you are leaning toward?				
29% who would vote PC	34	62	2	2
26% voting Liberal	47	45	5	3
9% voting Reform	22	72	5	1
8% voting BQ	44	48	7	1
6% voting NDP	53	38	6	3
1% voting National	33	41	20	6
20% who wouldn't vote or were still undecided	37	44	10	8

Columns may not add to 100% because of rounding.
Source: Globe Poll, September, 1993.

(*continued overleaf*)

The Globe Poll is a survey of 1,446 Canadian citizens 18 years old and over in the 10 provinces, conducted from Sept. 8 to 14 by ComQuest Research Group, a division of BBM Bureau of Measurement.

The sample for the poll is based on listed telephone numbers. Homes were selected randomly from this list and one person was randomly selected within each household to be interviewed. No substitutions were allowed. Data from the interviews were adjusted to reflect the age, sexual and regional composition of Canada, based on the 1991 census.

The size of the sample is expected to yield a reflection of all Canadian voters to an accuracy of plus or minus 2.6 percentage points 19 times out of 20.

Twelve days after the publication of the article EM9335 reprinted overleaf on page HL12.1 and above, the LETTERS TO THE EDITOR section of *The Globe and Mail* (September 29, page A24) contained the following:

Detects bias

The Globe and Mail/ComQuest Research Group Poll of Sept. 17, *How to Improve the Economy*, is a textbook example of a survey biased by leading questions. The government-should-create-jobs option is qualified by the *negative* consequence "even if it means the deficit will increase."

For balance, the reduce-the-deficit option should have the qualifier "even if it means unemployment will increase." Instead, it is followed by the *positive*-sounding "leave it to private business to create jobs."

This statement is not even plausible, as never in history has the private sector, unaided by the state, provided increasing per capita working hours over time.

Like all the election commentary, the survey does not even recognize the option of the government trying to create jobs by regulating the economy in other ways than direct government spending on jobs.

Ian Gatensby, Ridgeway, Ont.

The follow-up of statistical interest, to the matter raised by Ian Gatensby, is contained in the following article EM9341, which appeared 17 days after his letter and 29 days after the article reporting the results of the first poll.

EM9341: The Globe and Mail, October 16, 1993, pages A1 and A8

Liberals near majority, *Globe* Poll finds

Survey suggests Tories are faltering, support for Reform has peaked, Bloc remains strong

HUGH WINSOR
Parliamentary Bureau

The Liberal Party led by Jean Chrétien is continuing to make substantial gains and is in striking distance of a majority government, the latest *Globe* Poll shows.

The poll also found that Conservative Leader Kim Campbell's attempt to revive her campaign with more direct attacks on the Liberals and the Reform Party has not been working and the Tories are now in second or third place throughout the country. Reform has made strong gains in Ontario and held on to its strength in Alberta and British Columbia, but may now have peaked.

Based on a national survey of 1,504 eligible voters between Monday and Thursday, the Liberals now have the support of 40 per cent of decided and leaning voters, compared with 22 per cent for the Conservatives, 16 per cent for Reform, 13 per cent for the Bloc Québécois, 7 per cent for the New Democrats and 1 percent for the National Party.

The survey, conducted for *The Globe and Mail* by ComQuest Research Group, also shows that the level of undecided voters has dropped dramatically as the Oct. 25 election approaches. It now stands at 13 per cent, compared with 20 per cent in *The Globe* Poll taken during the first week of the campaign.

In Quebec, the Bloc Québécois has increased its domination since the beginning of the campaign and now is the choice of 52 per cent of Quebec voters.

But there has been a shift within the federalist vote toward the Liberal Party, which now has 26 per cent of Quebec's decided voters compared with 16 per cent for the Conservatives. That compares with 20 per cent for the Liberals at the beginning of the campaign in Quebec and 32 percent for the Tories.

This dramatic Conservative decline in Quebec follows Ms. Campbell's lacklustre performance in the French television debate, and the departing Tory supporters seem to be dividing equally between the Bloc and the Liberals.

In the rest of Canada, the Liberals' lead over the Conservatives has now reached 20 percentage points, whereas the two parties were virtually tied outside Quebec at the beginning of the campaign.

Changes in the pattern of responses even within the four days the survey was being taken suggest the Liberals continued to have momentum, the Conservatives were stalled and the Reform Party growth has started to level out.

Although Ms. Campbell still leads her party in popularity by a small margin, Mr. Chrétien is now the first choice of respondents when asked who would make the best prime minister. This is a dramatic turnaround since the beginning of the campaign, suggesting that the Liberals have outcampaigned the Conservatives.

On the major concern of voters, unemployment and job creation, the poll shows voters prefer the Liberal position by a wide margin, and the Conservatives' aggressive advertising campaign aimed at discrediting the Liberal platform has failed.

Based on the current regional breakdowns in *The Globe* Poll, the Liberals are poised to virtually sweep Ontario, Manitoba and Sas-

1996-04-20 — **SUMMARY** — (*continued*)

Sept. 8-14

- The government should invest money in job programs and training to improve the economy, even if it means increasing the deficit, OR
- The government should concentrate on reducing the deficit and leave it to private business and investors to create jobs.

	Invest in jobs	Cut the deficit	Neither	Don't know
All of Canada	39%	52%	6%	3%
Men	32	60	6	2
Women	45	45	6	4

Oct. 11-14

- The government should invest money in job programs and training programs, even if it means increasing the deficit, OR
- The government should concentrate on reducing the deficit, even if it means more unemployment.

	Invest in jobs	Cut the deficit	Neither	Don't know
All of Canada	57%	31%	8%	5%
Men	51	36	7	5
Women	62	27	8	4

ERROR: Measurement Error – *Deficit outranks jobs in poll* (continued 1)

katchewan and to make gains in Atlantic Canada. Depending on the splits in individual ridings, the Liberals could also win some seats in Alberta, although the Reform Party is clearly in the lead there, and will be competitive in parts of British Columbia.

Contrary to some other surveys that have suggested the Bloc Québécois is stronger in rural Quebec than in the Montreal area, the new *Globe* Poll shows no substantial difference between Bloc support levels in Montreal and elsewhere in Quebec. This means the Bloc is poised to win almost all of the seats in rural Quebec and most of the ridings with francophone majorities in the Montreal area.

The major turnaround in perceptions of the Liberals and Conservatives during the campaign apply to both policy and leadership. Mr. Chrétien was chosen as best person to be prime minister by 31 per cent of the respondents, compared with 24 per cent choosing Ms. Campbell. Reform Leader Preston Manning got the support of 10 per cent, the Bloc's Lucien Bouchard 7 and the NDP's Audrey McLaughlin 5, while 23 per cent were undecided.

The growing Liberal strength was also indicated when respondents were asked to rate both leaders and political parties on the question of which party and which leader had the best approach to managing the economy, job creation and social programs.

In voters' opinions, Liberals now outrank Conservatives 24 to 17 on managing the economy, 32 to 13 on job creation and 24 to 16 on social programs. By comparison, the Reform Party ranking was 11 per cent on managing the economy, 6 per cent on job creation and 7 per cent on social programs.

The survey also confirmed that the preponderant concerns of the voters are job creation at 32 per cent and economic management at 9 percent, for a total of 41 per cent, compared with 15 per cent who cited the deficit as the most important issue. (When those who cited economic management were prompted to be more specific, twice as many cited jobs and unemployment as cited deficit or debt as their most important concern.)

Nevertheless, the emphasis placed on deficit reduction by Ms. Campbell and Mr. Manning during the campaign has raised the profile of the deficit and debt as an issue. Only Reform supporters, however, ranked deficit reduction and debt as the most important issue to them. And even though Ms. Campbell appeared throughout the campaign to be preoccupied with the deficit, only 22 per cent of Tory supporters ranked deficit concerns first, compared with 28 per cent who said job creation was the most important issue.

When it comes to solutions, the Liberal Party has been more successfull in promoting its policies, which are keyed to job creation by the federal government.

When respondents were asked to choose between an economic approach that emphasized job creation and training – "even if it means increasing the deficit" – and an approach that emphasized deficit reduction – "even if means more unemployment" – 57 per cent opted for job creation compared with 31 per cent who chose deficit reduction.

The survey also attempted to test reactions to some of the parties' advertising, especially the Conservative ad that showed a construction worker dumping a wheelbarrow full of loonies into the mud.

When asked to respond to the state ment "Building roads and bridges as a make-work project is just pouring tax money down the drain," 50 per cent disagreed with the statement, 41 per cent agreed and the remainder were undecided.

This sentiment was even stronger when respondents were asked to reply

HOW PEOPLE WOULD VOTE NOW

If a federal election were being held today, which one of the following parties would you vote for?
(Percentages of decided and leaning voters only.)

	Oct. 11-14							Sept. 8-14
	Canada	Atlantic	Ont.	Que.	Man./ Sask.	Alta.	B.C.	Canada
Liberals	40%	46%	51%	26%	55%	30%	31%	33%
PCs	22	42	22	16	15	24	25	36
Reform Party	16	4	19	2	16	41	26	11
Bloc Québécois*	13	--	--	52	--	--	--	10
NDP	7	7	7	4	15	5	13	8
National Party	1	2	1	--	--	--	5	2
Another party	1	1	1	1	--	--	1	1

*asked only in Quebec.
Columns may not add to 100% because of rounding.
Source: Globe Polls, 1993.

COMPARING LEADERS' POPULARITY

Which leader ..... do you think would make the best Prime Minister of Canada?
(Percentages of respondents who identified a leader.)

	Oct. 11-14			Sept. 8-14		
	Canada	Quebec	TROC*	Canada	Quebec	TROC*
Chrétien	31%	20%	34%	19%	13%	22%
Campbell	24	19	26	39	44	37
Manning	10	2	12	7	1	10
Bouchard**	7	28	--	4	14	--
McLaughlin	5	3	5	4	3	5
Hurtig	2	1	2	1	1	1
None/undecided	23	27	21	25	25	25

*The rest of Canada, apart from Quebec.
**Lucien Bouchard's name was included for Quebec voters only.
Source: Globe Polls, 1993.

HOW TO IMPROVE THE ECONOMY

As you probably know, Canada is facing some choices about our economy over the next year or so. Which of the following two approaches is closest to your own?

- The government should invest money in job programs and training programs, even if it means increasing the deficit, OR
- The government should concentrate on reducing the deficit, even if it means more unemployment.

	Invest in jobs	Cut the deficit	Neither	Don't know
All of Canada	57%	31%	8%	5%
Men	51	36	7	5
Women	62	27	8	4

Columns may not add to 100% because of rounding.
Source: Globe Poll, Oct. 11-14, 1993.

(*continued overleaf*)

to the statement that "unemployment is so bad that the federal government must increase government spending on programs that create more jobs": 61 per cent agreed with the statement while only 30 per cent disagreed.

How *The Globe* Poll was done

The Globe Poll is a survey of 1,504 Canadian citizens 18 or older in the 10 provinces, conducted from Oct. 11 to 14 by Com-Quest Research Group, a division of BBM Bureau of Measurement.

The sample for the poll is based on listed telephone numbers. Homes were selected randomly from this list and one person was randomly selected within each household to be interviewed. No substitutions were allowed. Data from the interviews were adjusted to reflect the age, sexual and regional composition of Canada, based on the 1991 census.

The size of the sample is expected to yield a reflection of all Canadian voters to an accuracy of plus or minus 2.5 percentage points 19 times out of 20.

For results from smaller subsamples, based on region, the likely deviation is larger. The possible deviation in either direction for regional results is: 9.4 percentage points for Atlantic Canada, 5.1 for Quebec, 4,4 for Ontario, 9.3 for Manitoba and Saskatchewan combined, 8.4 for Alberta and 5.9 for British Columbia. When comparisons are made between results for Quebec and the rest of Canada, the probability of deviation in either direction for results from the rest of Canada is 2.9 percentage points.

Results have been rounded to the nearest percentage point. Figures ending in .1 to .4 were rounded down; figures ending in .5 to .9 were rounded up.

Where parties and leaders were mentioned in questions, their order was rotated randomly. When people were asked asked to agree or disagree with a series of statements, the statements were also rotated randomly.

HOW TO IMPROVE THE ECONOMY (continued)

I am now going to read you a series of statements about national politics. Do you agree or disagree with each of the following?

..... Building roads and bridges as a make-work project is just pouring tax money down the drain.

	Agree	Disagree	Undecided
All Canadians	41%	50%	10%
Atlantic	29	63	8
Quebec	39	50	11
Ontario	45	48	8
Manitoba/Sask.	31	56	14
Alberta	52	38	10
British Columbia	38	52	9

..... Unemployment is so bad that the federal government must increase government spending on programs that create more jobs.

	Agree	Disagree	Undecided
All Canadians	61%	30%	8%
Atlantic	75	17	8
Quebec	66	25	9
Ontario	62	31	7
Manitoba/Sask.	60	31	9
Alberta	49	39	12
British Columbia	52	42	6

Columns may not add to 100% because of rounding.

Source: Globe Poll, Oct. 11-14, 1993.

The following questions refer to the two (longer) newspaper articles EM9335 and EM9340 reprinted in this Highlight #12.

1. Using poll results given in the two articles and following Tufte's *principles of graphical excellence* (*e.g.*, see Statistical Highlight #23), prepare a display which shows the effect of question wording on *How to improve the economy.*
   - On the basis of your display, summarize (in point form) the main *differences* in public opinion as measured by the two sets of question wording.
   - This Highlight #12 presents a classic illustration of the effect of *measurement* error in the context of survey sampling, comparable to the illustration of study and non-response error in *The Literary Digest* poll (Statistical Highlight #17). Unfortunately, Highlight #12 has one *weakness* as an illustration; what is this weakness? Explain briefly.
     - How is this weakness analogous to statistical discussion of *The Literary Digest* poll? Explain briefly.

2. At or near the end of each article, in the description of how the polls were done, the margin of error for the national results is given as 2.6 and 2.5 percentage points. Show how these two figures are derived.
   - In essence, why is the margin of error slightly *smaller* for the second poll? Explain briefly.
   - Comment on the use of the word *accuracy* in the description of these margins of error for the polls.
   - Explain the comment (at the start of the 5th paragraph above): *For results from smaller subsamples, based on region, the likely deviation is larger.*

3. Matters of sample survey *design* are mentioned at several places in the articles. For each design feature given below, explain briefly:
   - *why* it is important; • *how* it might be implemented; • which component of *error* it is attempting to manage.
   - ∗ *The sample ..... is based on listed telephone numbers* [columns 1 and 2 at top of second side (page HL12.2); *3*rd paragraph above];
   - ∗ *Homes were selected randomly from this list and one person was randomly selected within each household to be interviewed* [column 2 at top of second side (page HL12.2); *3*rd paragraph above];
   - ∗ *No substitutions were allowed* [column 2, second side (page HL12.2); *3*rd paragraph above];
   - ∗ *Data from the interviews were adjusted to reflect the age, sexual and regional composition of Canada, based on the 1991 census* [columns 2 and 3 at top of second side (page HL12.2); *3*rd paragraph above];
   - ∗ *Where parties and leaders were mentioned in questions, their order was rotated randomly. When people were asked to agree or disagree with a series of statements, the statements were also rotated randomly* [last paragraph above].

The two newspaper articles EM9335 and EM9341, reprinted in this Highlight #12, are also used in Figure 8.8c of the STAT 220 Course Materials and in Figure 3.5c of the STAT 332 Course Materials.