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Redesign of the Canadian Survey of Household Spending

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Outline

- **Redesign overview**
  - Previous collection model
  - Redesign objectives
  - New data collection model
  - Evaluation and implementation strategy
- **2009 Parallel run results**
- **Remaining challenges**
- **Balanced editing procedures**

Survey of Household Spending (SHS)

- Data collected annually through CAPI in all provinces; territories every 2nd year

- Interview length: about 1h45m on average

- Collection: January-March each year

- Recall survey: previous calendar year for all items
  - Allows for full account balancing (changes in assets/debts, income, expenditures)

- In general, the sample size is 21,000 households

Food Expenditure Survey (FES) 2001, 1996, ...

- Periodic survey on detailed food expenditures

- Diary over a two-week period

- Important complement to SHS
  - Ex: Provide CPI food weights

- Last conducted in 2001; no sustainable funding

- Sample size of 9,000 households in FES 2001 in comparison to 16,000 in previous years

Redesign objectives

- Spread data collection over the year
  - Reduce overload in January-March period
- Adapt the reference period to the capacity of respondent to provide information
  - Reduce the length of recall period for some categories of expenditures
- Reduce the length of the interview
- Integrate the content of FES to the SHS
  - Budget considerations vs frequency
  - Sample size not large enough to meet the user requirements

New data collection model

- **International expenditure survey model**
  - Continuous data collection over the year
  - Combination of interview and diary for each selected household
  - Interview with various recall periods according to the size and the frequency of the expenditures
  - Diary over a period of 14 days
    - For most of the expenses including detailed food expenditures

New Data Collection Model

	Interview Recall Period			Two-week Diary
	12 months	<=3 months	Last payment	
" Questions"	39 %	6%	8 %	47 %
Consumption expenditures	33 %	9 %	28 %	30 %

Based on the new design of 2009 SHS

New data collection model

- Response burden

  - Control the interview length to 60 minutes

  - Ask consent to use tax data on income

  - Use of receipts to reduce transcription

- Cost reduction

  - Replace personal visit for the follow-up during the diary recording period by telephone call

  - Reduce verification procedures during the diary pick-up

  - Coordination of the sample with other surveys on the field

Evaluation and implementation

- Pilot survey

  - Evaluation of the new model

  - November 2007 to October 2008

  - 4,200 households in Quebec and Ontario

- Parallel run of the two collection models for 2009 reference year

  - Impact of the new methods on survey outputs

  - Sample of 9,000 households over the ten provinces

- Implementation in January 2010

  - Sample of 20,000 households over the ten provinces

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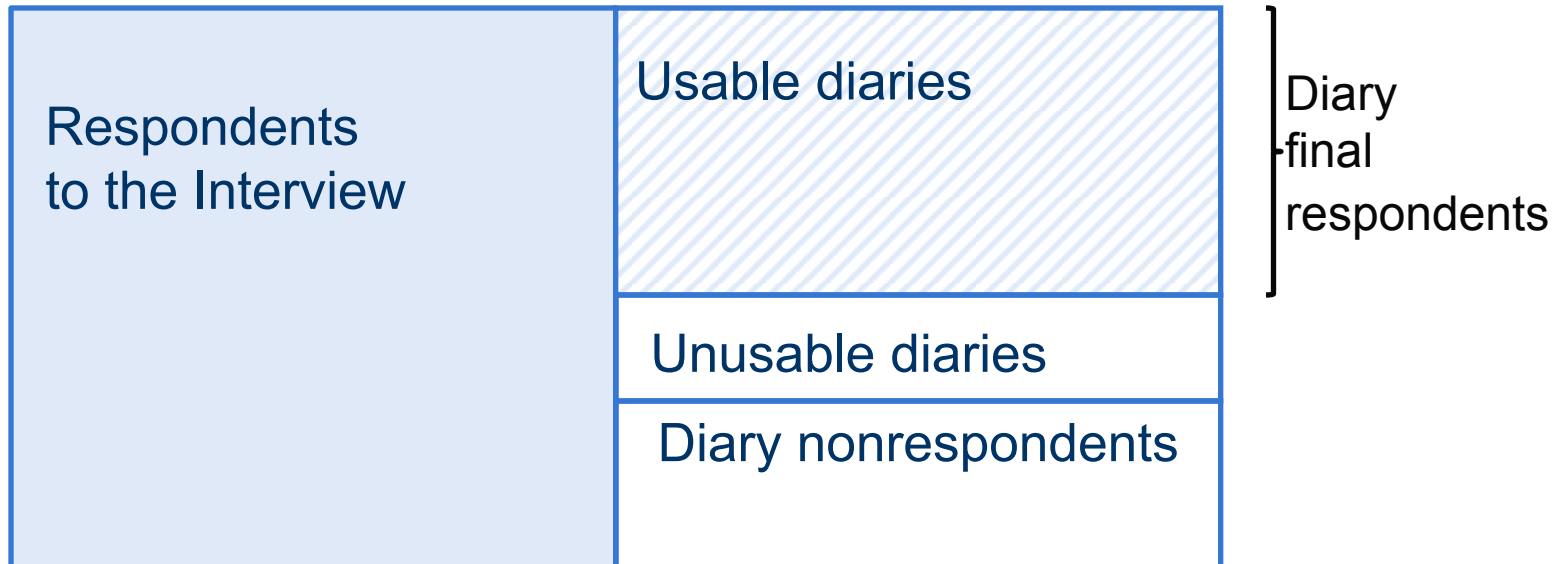
Collection response rates

	Pilot Survey (Quebec and Ontario)		2009 SHS New design (10 provinces)		2010 SHS New design (10 provinces)
	Original Diary (10 months)	Modified Diary (2 months)	Quebec and Ontario	All provinces	All provinces
Interview	60%	63%	60%	62%	67%
Diary accepted	69%	75%	80%	83%	82%
Diary returned	63%	66%	69%	71%	73%

Note: Diary response rates based on the respondents to the interview

Usable diaries

- **Pilot** : minimum of 5 responded days
  - **89% of returned diaries**

- **SHS 2009 – New design**: based on minimum thresholds by revenue classes and household size
  - Thresholds in terms of number of items and expenses
  - Adapted BLS approach
  - **95% of returned diaries**

Diary nonresponse

Respondents to the Interview	Usable diaries	Diary-final respondents
	Unusable diaries	
	Diary nonrespondents	

- ## Representativity of the diary improved by
  - Diary nonresponse adjustment based on Interview data
  - Calibration on demographic totals

Weighting steps

1. Basic weights
2. Interview nonresponse adjustment

Interview

Diary

3. Interview calibration

4. Diary nonresponse adjustment

5. Diary calibration
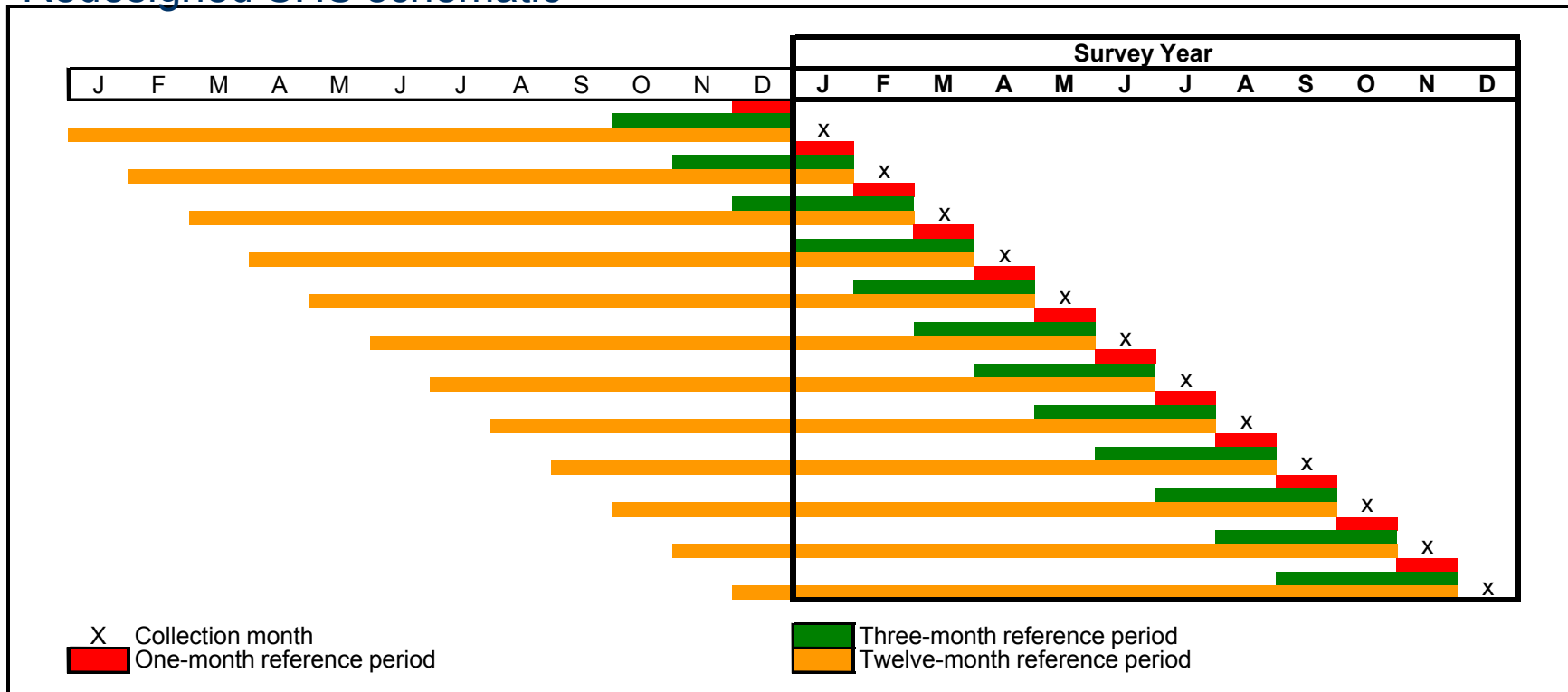
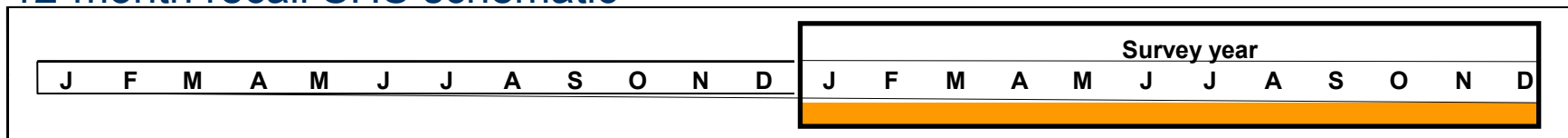• **Final Interview weights**

•**Final Diary weights**

Effect of reference periods

Redesigned SHS schematic

Legend:
- X — Collection month
- One-month reference period (red)
- Three-month reference period (green)
- Twelve-month reference period (orange)

12-month recall SHS schematic

Estimation

- Interview data are based on different lengths of recall period

  - They are multiplied by the appropriate factor to represent an annual value

- Diary data are based on a 14 day period

  - They are multiplied by 26 to represent an annual value

- Aggregated Interview and aggregated Diary mean estimates are first produced separately

  - Then they are combined to get estimates for larger categories of expenditures

2009 Parallel run results

- Interview length: median of 55 minutes
  - Simplified diary easier to explain
  - Tax permission for 78%

- Last payment questions
  - Estimates and CVs generally similar to the 12-month recall in the old collection model

- 3-month recall questions
  - Sequence of 3-month and 12-month questions in the new questionnaire was reviewed for 2011

2009 Parallel run results

- Diary estimates lower than the 12-month recall in SHS 2009
  - 9% for frequent expenses
  - 14% for less frequent expenses

- Incomplete diaries contribute to underestimation
  - 20% of days in usable diaries are "nonresponded" days
  - Respondent fatigue

2009 Parallel run results

- Frequently forgotten expenses on the diary
  - Mainly expenses without receipts

- Only receipts provided by 21% of households
  - Average expenditures of the diary significantly lower

- Diary instructions and pick-up procedures were improved
  - Ask for a two-week recall value for forgotten items (5% of the estimates)

Remaining challenges

- Increase interview and diary response rates
- Improve diary follow-up and pick-up procedures
  - "No purchases day", items forgotten, respondent fatigue
- Improve quality of diary processing methods
- Collection and processing costs vs quality

Remaining challenges

- First release of the redesigned 2010 SHS

- Inform the users

- Adapt survey outputs to the new methodology

- May have to produce new specific outputs for some users

  - More development is needed

Balanced editing procedures

- These procedures were used with the previous collection model of SHS

- This ensures that expenditures match household income and other sources of funds

- Not used anymore with the redesigned survey

  - A household's expenditures come from different reference periods

  - Large part of expenditures come from the diary and will only be available later

  - The revenue components come from tax data for most of the respondents and will only be available later

References

- Tremblay, J., Lynch, J. and Dubreuil, G. (2010) Pilot Survey Results from the Canadian Survey of Household Spending Redesign, Joint Statistical Meetings 2010.

- Nadeau, C., Tremblay, J. and Lessard, S. (2007) Sampling and Estimation Issues in the Redesign of the Canadian Survey of Household Spending , Joint Statistical Meetings 2007.

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