

How the COVID-19 Pandemic Affected Data Quality in the Consumer Expenditure Surveys (CE)

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This presentation provides a summary of research results. The information is being released for statistical purposes, to inform interested parties, and to encourage discussion of work in progress. The presentation does not represent an existing, or a forthcoming new, official BLS statistical data product or production series.



Mode

INTERVIEW SURVEY

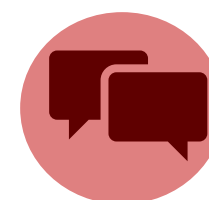
- conducted in two modes:
telephone or in-person

(designed to be conducted in-person)



DIARY SURVEY

- conducted in-person w/
paper diary



Mode

- Telephone surveys are generally associated with lower data quality (*Safir & Goldenberg, 2008*)
 - ▶ Demographics change to more wealthy respondents
 - ▶ Respondents' use of records is lower
 - ▶ Rounded-off values
 - ▶ Expenditures are higher (Biagas, 2020)
 - ▶ Higher rates of item non-response

From March 2020 (Quarter 1) to mid-July (Quarter 3), the Census Bureau suspended in-person interviews.

- Mode is predominantly affected here -

INTERVIEW SURVEY

- Interview survey conducted over phone only

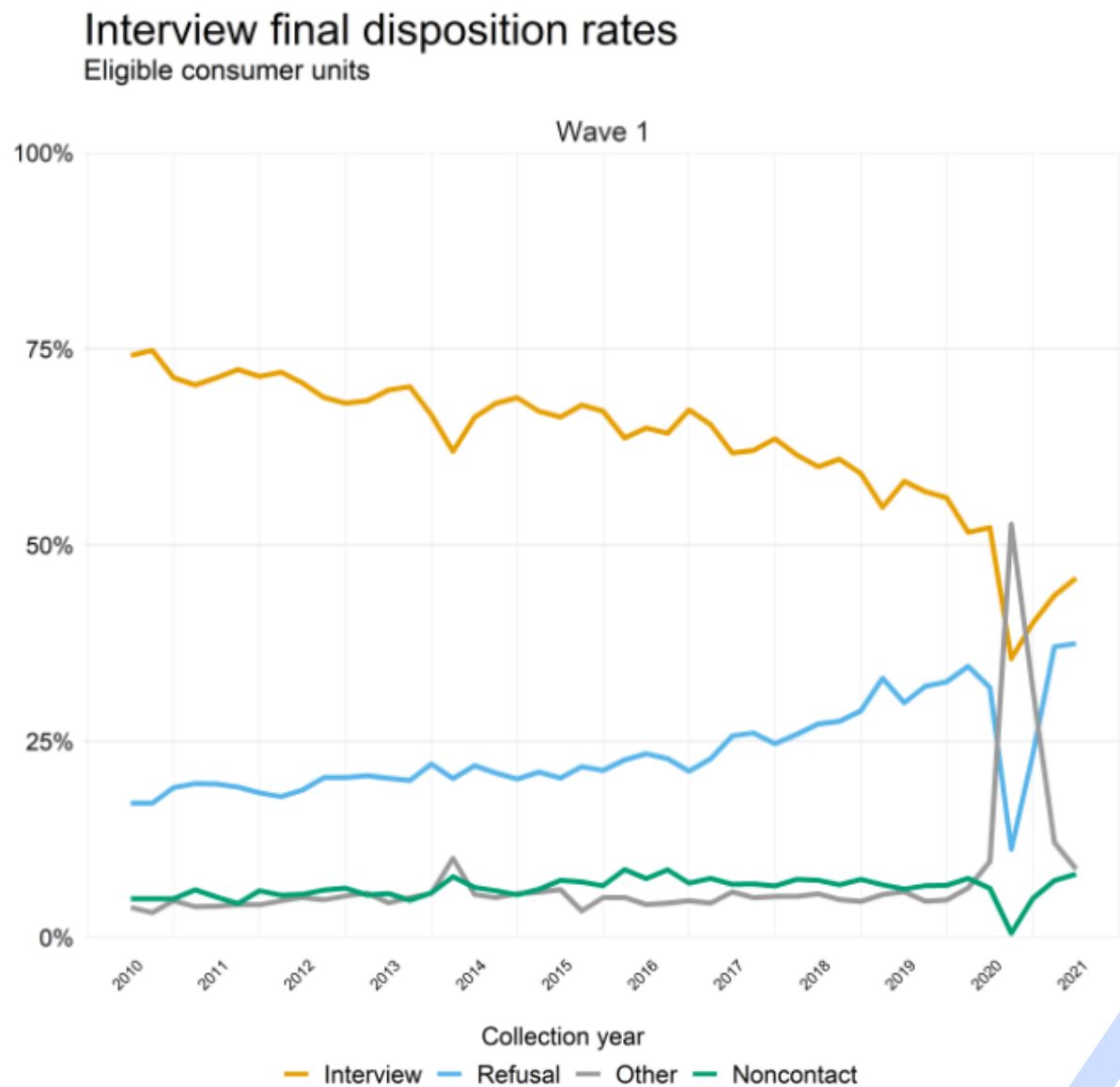
DIARY SURVEY

- Diary survey was dropped off remotely and/or transcribed over the phone

Interview Survey

2019, Quarter 4 – 2020, Quarter 2

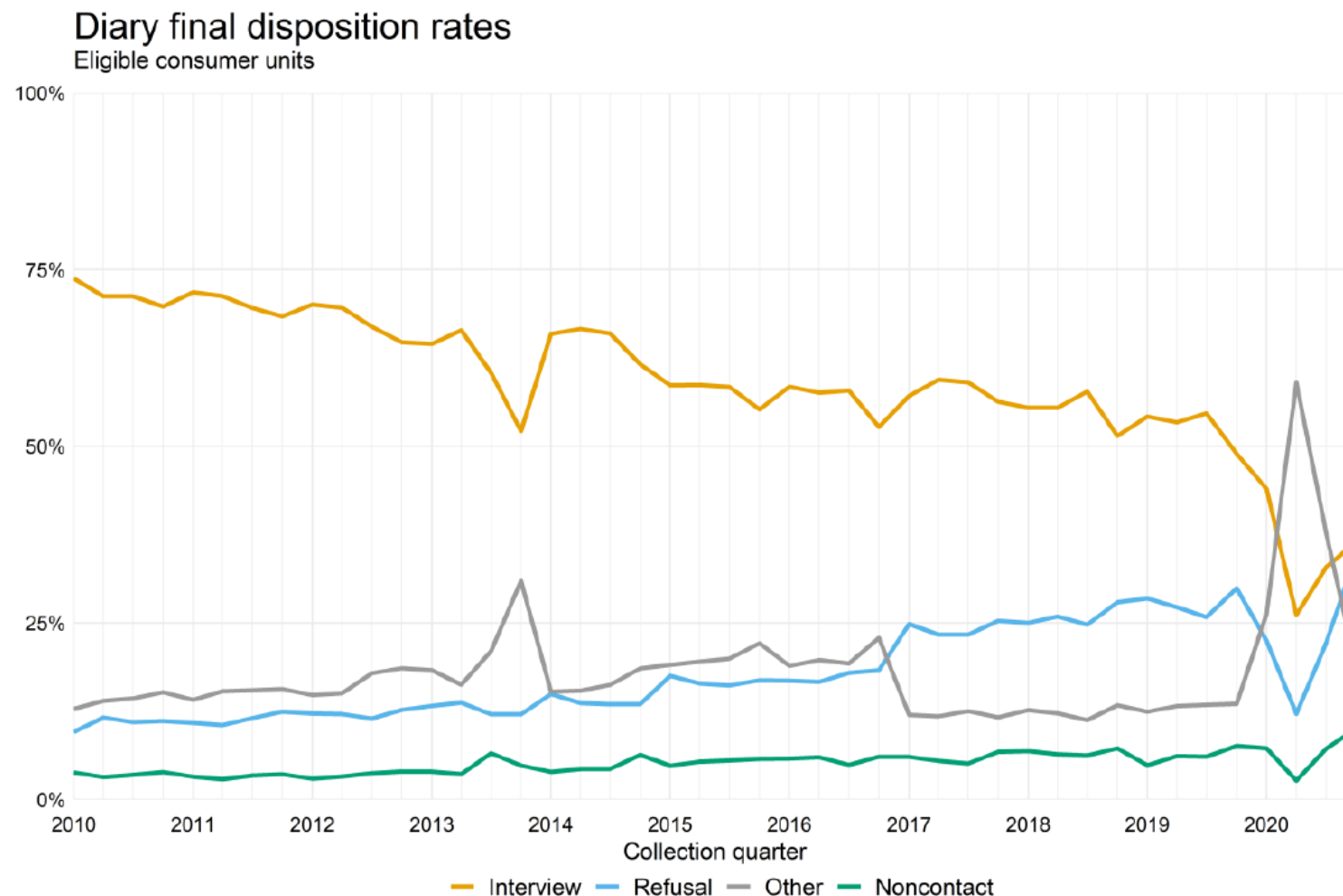
- Interview response rates declined by 6 percentage points
- Refusal rates dropped 13 percentage points
- Other non-response rates increased 32 percentage points
 - ▶ In these cases, a respondent did not answer the phone in the household or there was no working telephone number



Diary Survey

2019, Quarter 4 – 2020, Quarter 2

- Diary response rates declined by 23 percentage points
- Refusal rates dropped 18 percentage points
- Other non-response rates increased 40 percentage points



Expenditures

Expenditures dropped for both the interview and diary survey

Table 4.1 Diary Survey: reported expenditure records

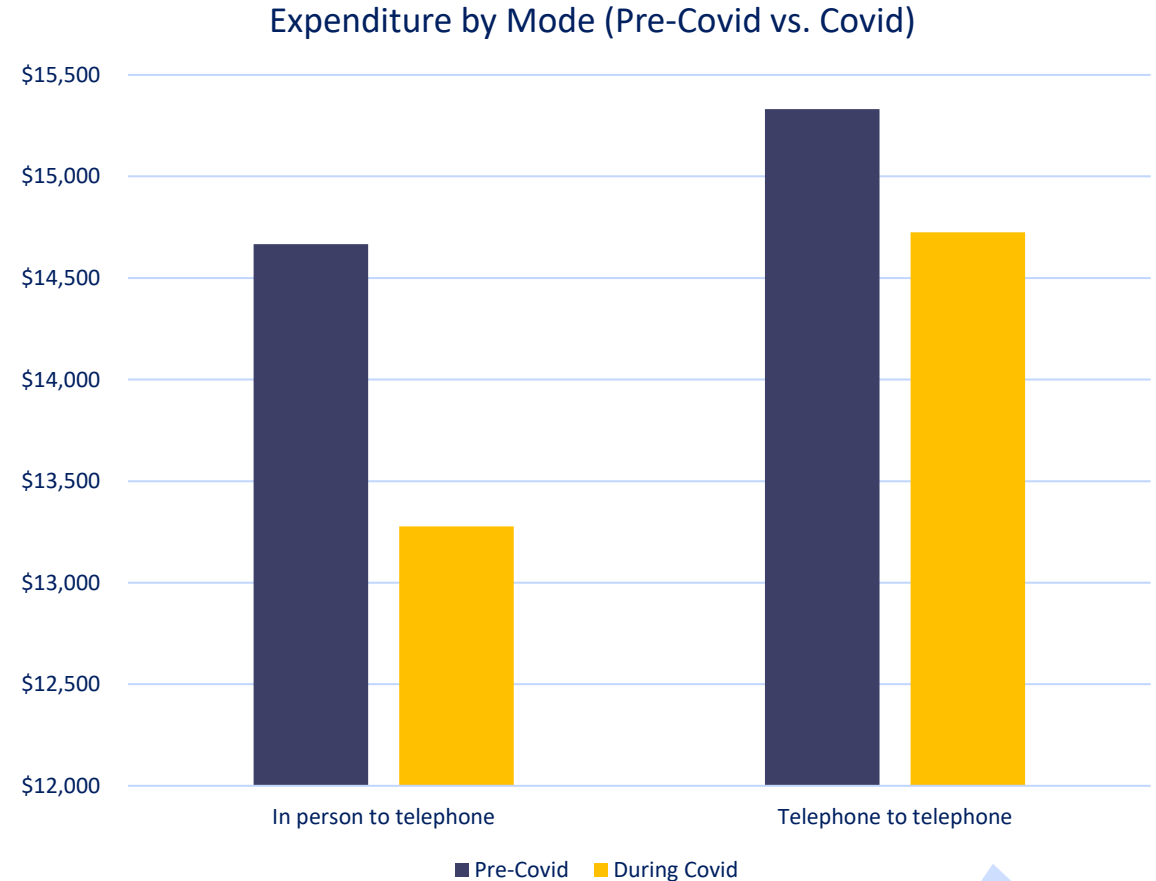
Quarter	Number of expenditures	Row percentage		
		Allocated	Other edit	Unedited
2018q1	86,798	9.8	0.1	90.1
2018q2	87,649	10.0	0.1	89.9
2018q3	88,342	10.0	0.3	89.7
2018q4	80,129	10.3	0.2	89.5
2019q1	79,626	10.2	0.0	89.7
2019q2	85,329	9.1	0.1	90.8
2019q3	83,639	10.5	0.0	89.5
2019q4	80,510	9.5	0.0	90.4
2020q1	102,693	9.2	0.0	90.7
2020q2	41,257	10.2	0.1	89.6
2020q3	56,071	11.6	0.0	88.3
2020q4	69,959	10.7	0.0	89.3

Table 4.2 Interview Survey: reported expenditure records

Quarter	Number of expenditures	Row percentage				Unedited
		Allocated	Imputed	Imputed & allocated	Manual Edit	
2018q2	270,726	12.0	3.9	0.2	0.1	83.9
2018q3	269,909	12.1	3.8	0.2	0.1	83.8
2018q4	259,508	12.0	3.8	0.2	0.1	84.0
2019q1	264,424	11.8	3.6	0.2	0.1	84.3
2019q2	255,037	11.7	3.7	0.2	0.1	84.2
2019q3	251,370	11.6	3.7	0.2	0.2	84.3
2019q4	244,834	11.6	3.8	0.2	0.2	84.2
2020q1	246,488	11.6	3.9	0.2	0.2	84.1
2020q2	217,785	11.9	4.1	0.2	0.1	83.6
2020q3	224,639	11.6	4.3	0.2	0.3	83.6
2020q4	232,195	11.6	4.3	0.2	0.3	83.6
2021q1	231,850	11.2	3.9	0.2	0.6	84.0

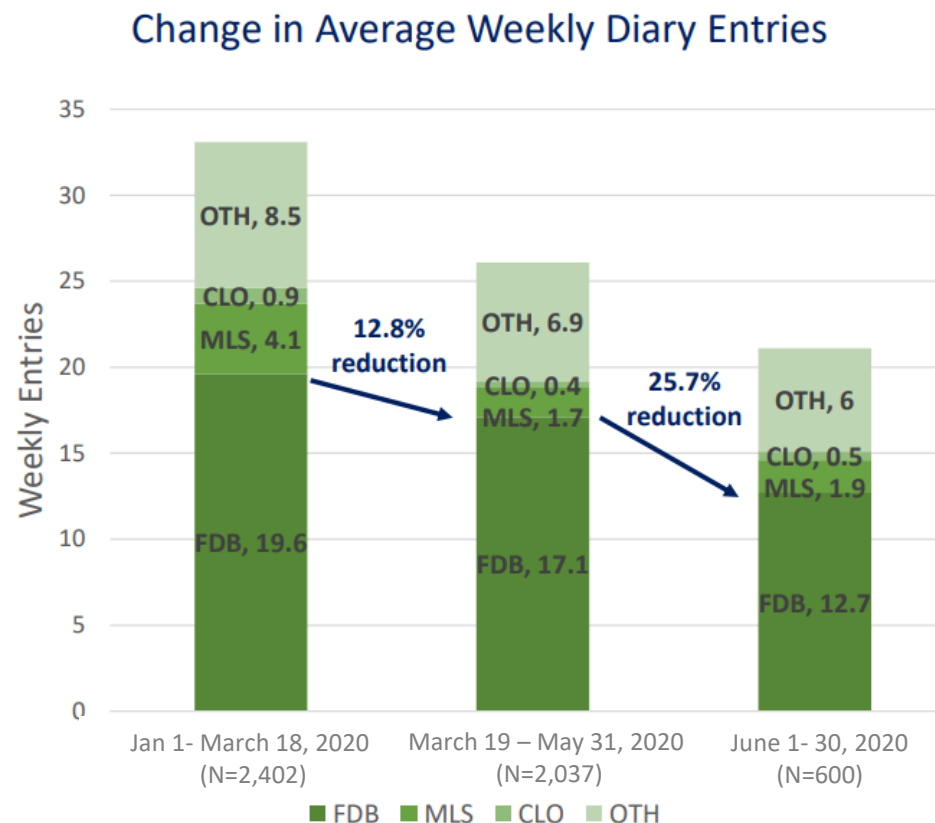
Interview Survey: Expenditures Per Respondent

- Respondents reported less expenditures in each individual interview
- This decrease was:
 - ▶ *greater* for respondents whose prior interview was in-person
 - ▶ *smaller* for respondents whose prior interview was over the phone



Diary Survey: Expenditures per Respondent

- Diary survey expenditures were also lower
- At right, number of average expenditure entries decreases post-Covid (*Q1 vs. Q2*)



Source: COVID-19 Protocol Changes and Consumer Expenditure Diary Reporting in 2020, McBride and Graf (2021)

Expenditures

Data edit percentages remained relatively constant

Table 4.1 Diary Survey: reported expenditure records

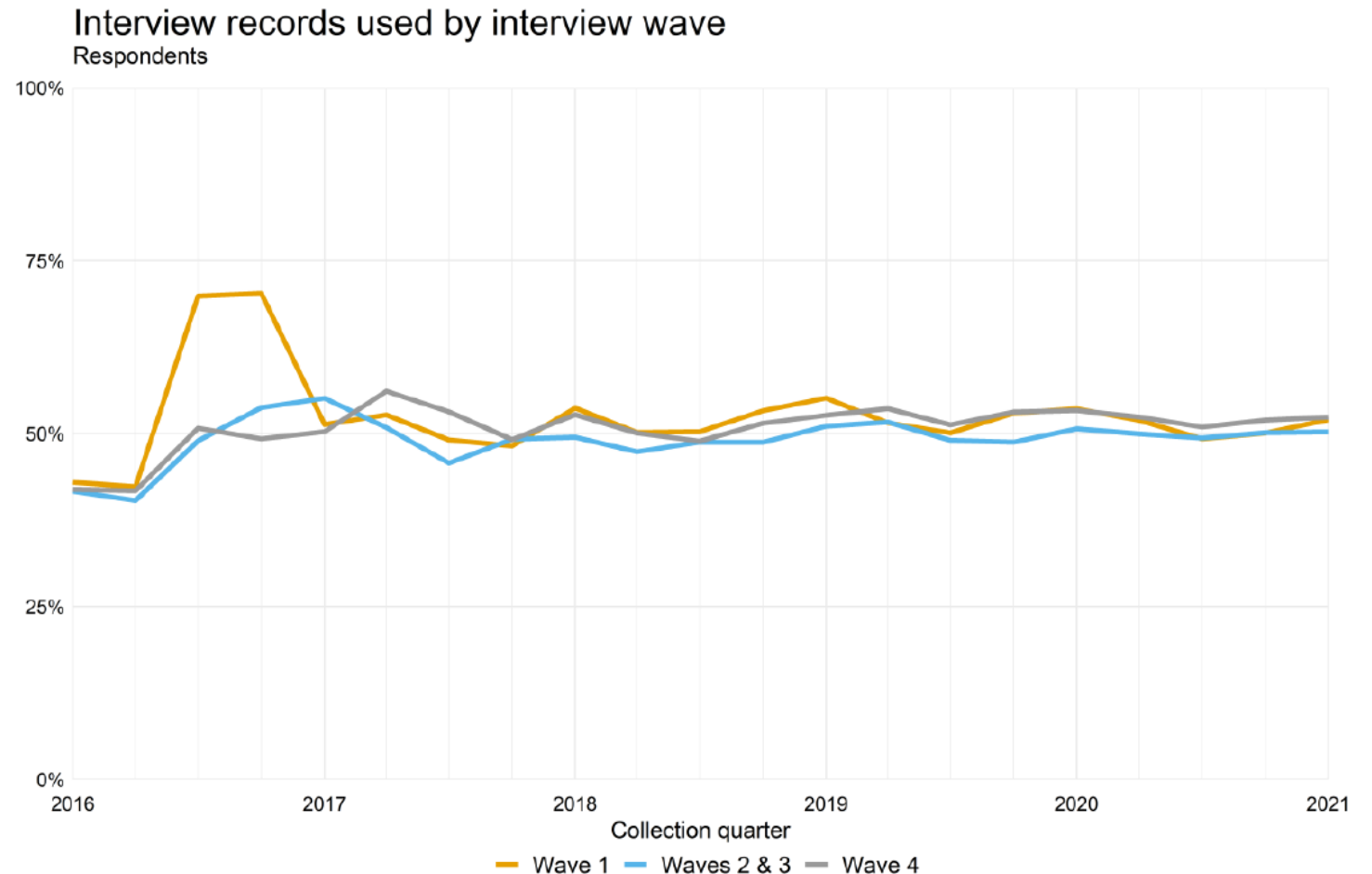
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2020q4	232,195	11.6	4.3	0.2	0.3	83.6
2021q1	231,850	11.2	3.9	0.2	0.6	84.0

Records Use

- Records use in the interview survey remained stable at 52 percentage points from 2019Q4 to 2020 Q2



Conclusion

- The biggest issues COVID-19 caused for the CE surveys were response rates
- Records use for the interview survey remained largely the same
- Number of expenditures was lower, but we can attribute this partially to decrease in spending during COVID
- Other impacted data quality indicators rebounded post-pandemic

Substantial concern in telephone surveys



2020 Annual CE Data Quality Report

https://www.bls.gov/cex/research_papers/pdf/dqreport-annual-2020.pdf

Effects of Covid-19 Pandemic and Response on the Consumer Expenditure Surveys

<https://www.bls.gov/covid19/effects-of-covid-19-pandemic-and-response-on-the-consumer-expenditure-surveys.htm>



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