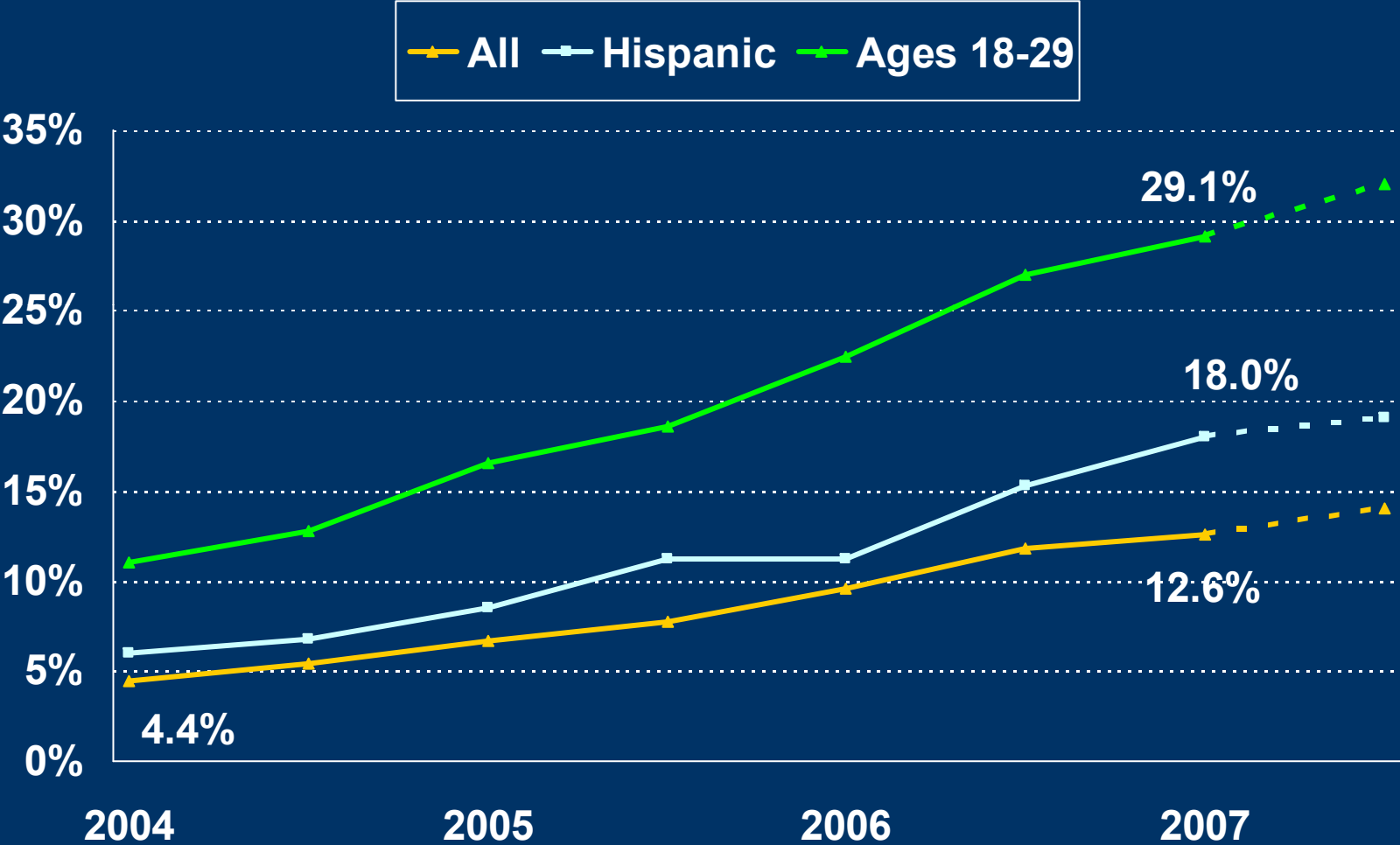


# The Impact of “Cell-Onlys” on Survey Research

Prepared for  
The International Field Directors and  
Technologies Conference  
May 19, 2008

Courtney Kennedy  
University of Michigan  
Program in Survey Methodology

# Growth in the Cell-only Population

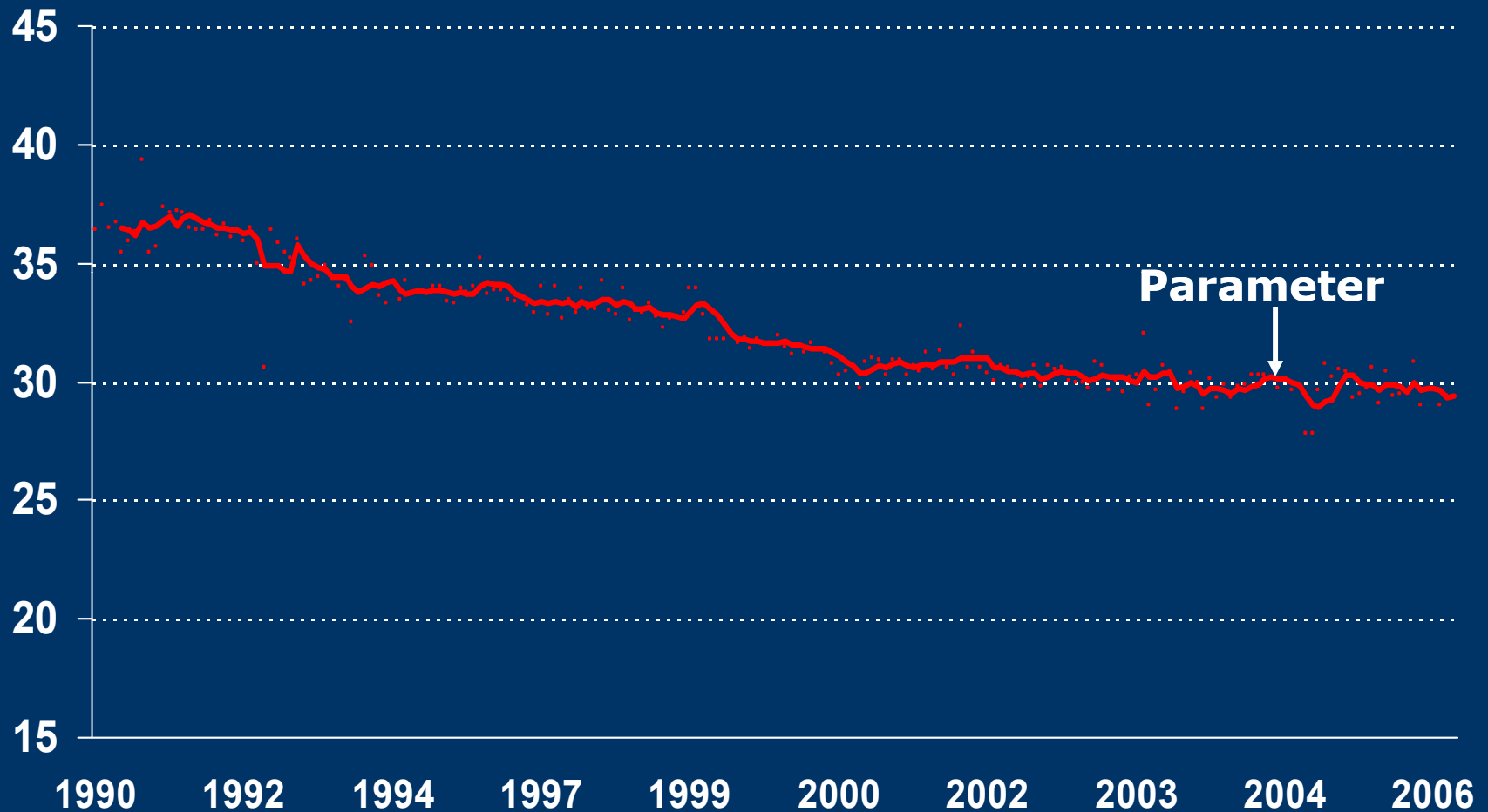


Source: National Health Interview Survey

# The Cell Phone Problem for RDD Surveys

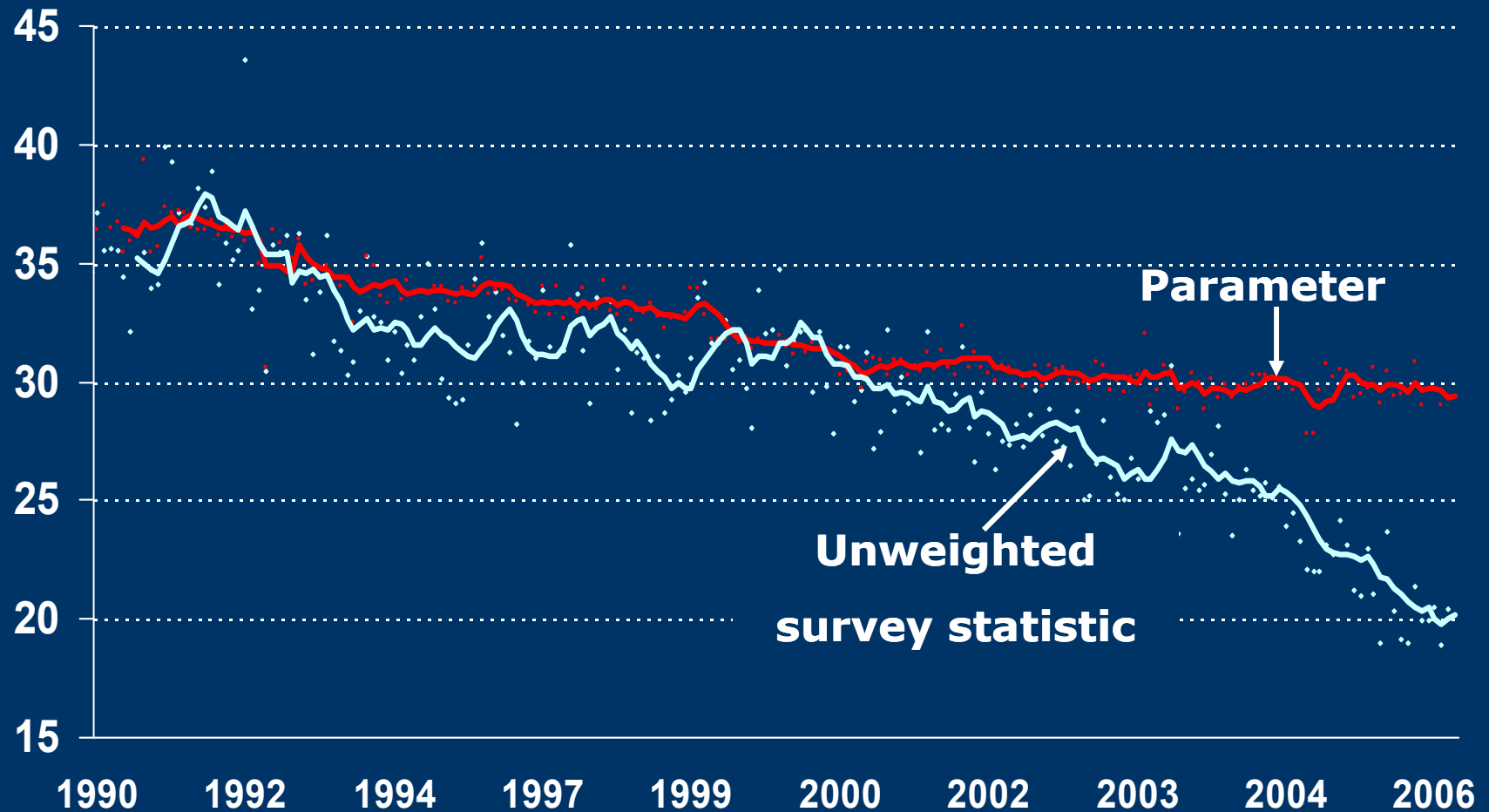
- One-in-eight U.S. adults is cell-only according to June 2007 NCHS data
- The cell-only population is demographically different from the landline population
- As a result, landline surveys have experienced a sharp decline in the percentage of younger respondents interviewed in their samples

# Percent Ages 18-34



Source: Pew Research Center surveys

# Percent Ages 18-34



Source: Pew Research Center surveys

# Impact of Including Cell Phones

- Do survey estimates change when cell interviews are included?
  - Estimates for total population
  - Estimates for heavy cell users (e.g., 18-34 yr olds)
- Other benefits
- Quality of responses
- Cost and other practical considerations

# What We Did

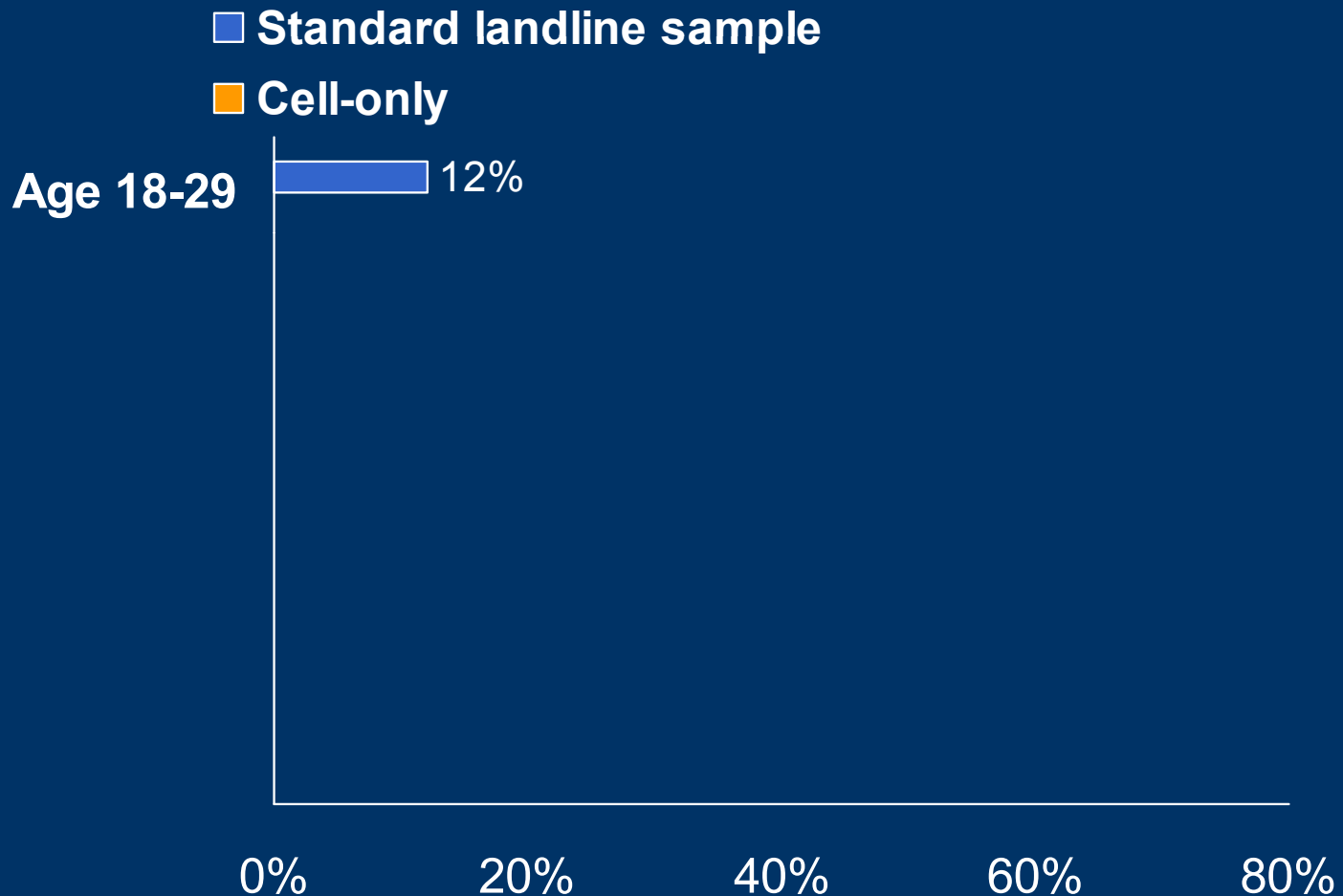
- 4 dual-frame surveys in 2006
- 2 dual-frame surveys in 2007
- In 2007, several questions were asked in both surveys and responses are pooled in this analysis

	<b>Oct. 07 survey</b>	<b>Dec. 07 survey</b>
Landline <i>N</i>	1,507	1,089
Cell phone <i>N</i>	<u>500</u>	<u>341</u>
Total	2,007	1,430

# Respondent Characteristics

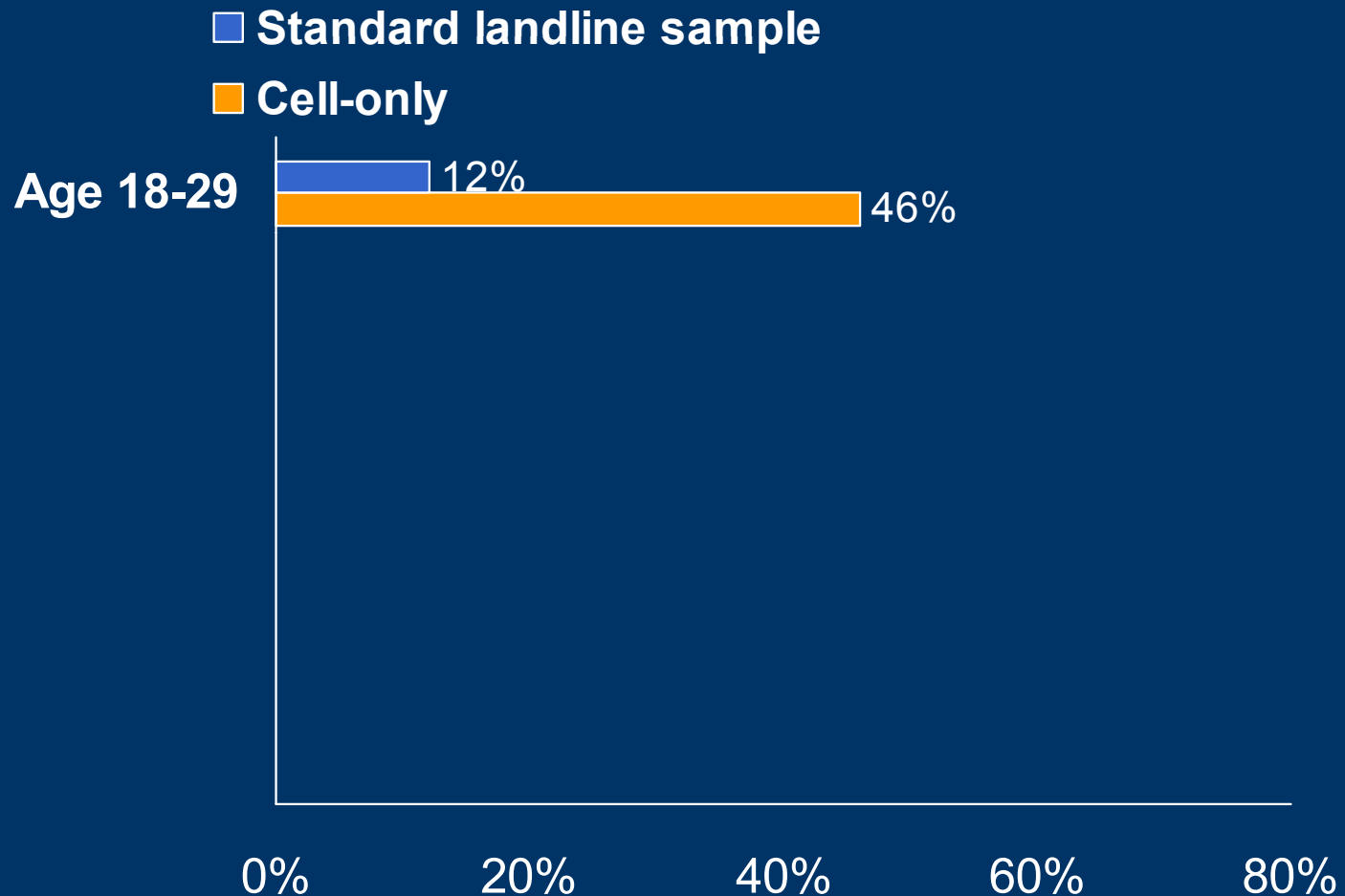
Landline sample versus Cell-only adults

# Characteristics of Landline Sample and Cell-only Respondents\*



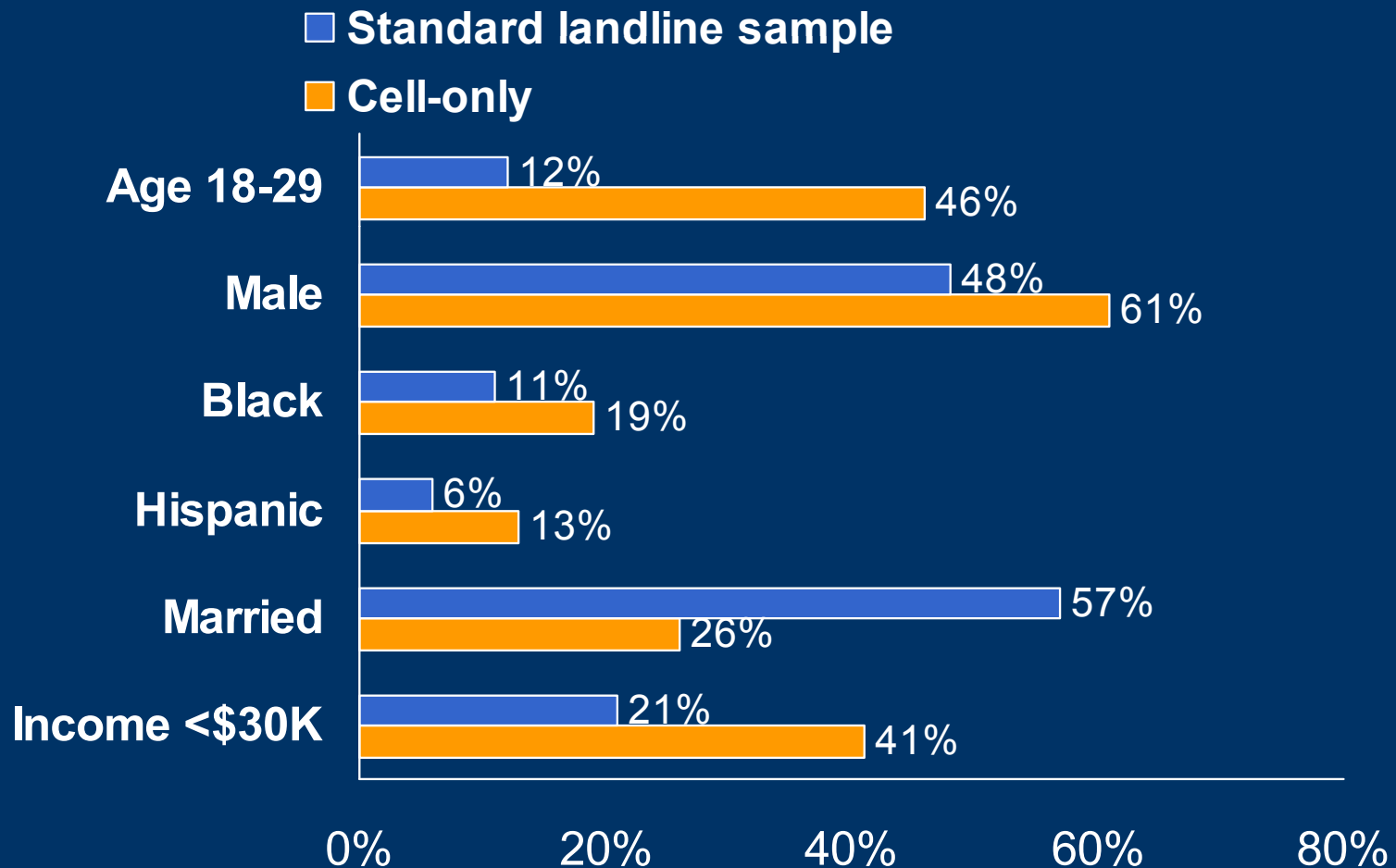
\*Figures based on unweighted data

# Characteristics of Landline Sample and Cell-only Respondents\*



\*Figures based on unweighted data

# Characteristics of Landline Sample and Cell-only Respondents\*

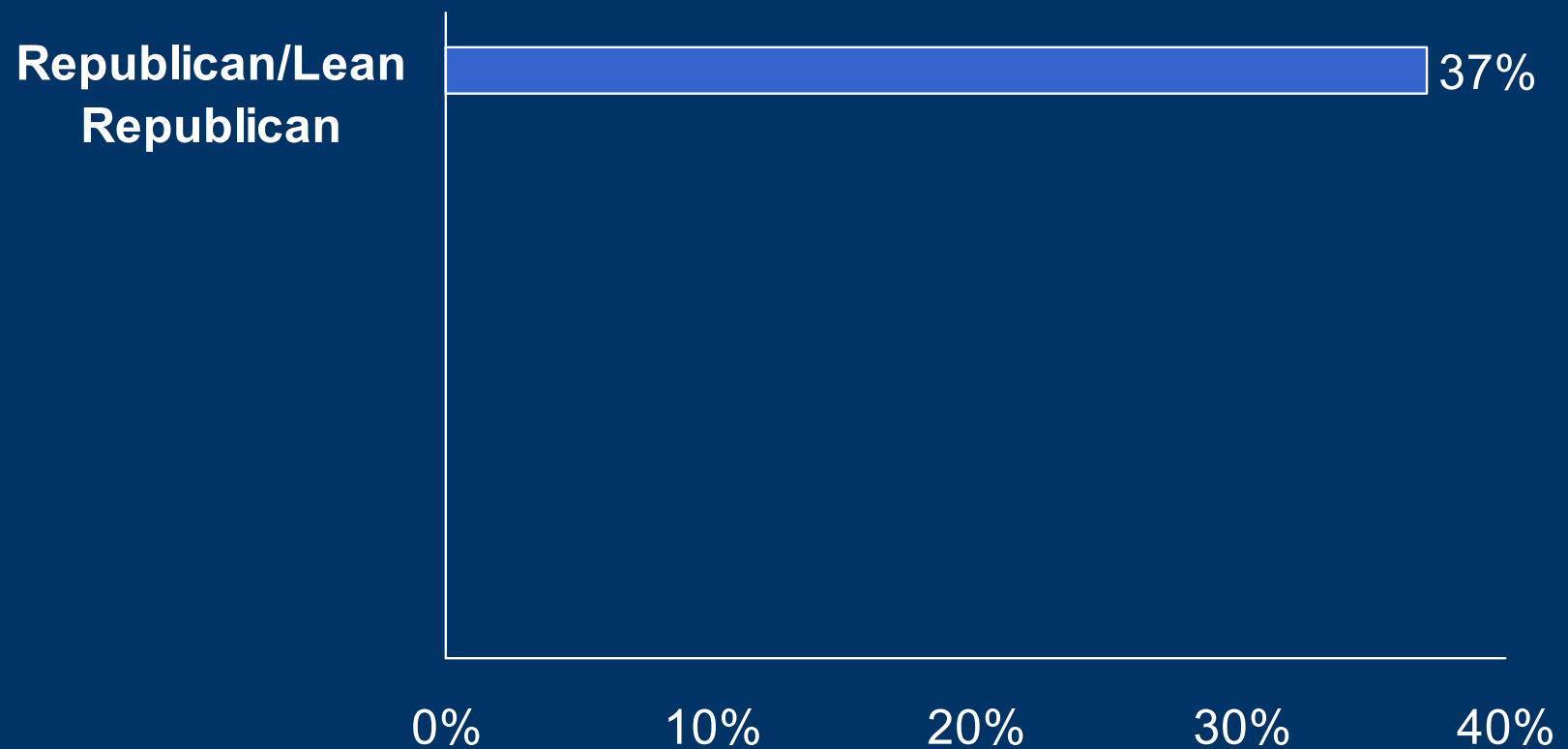


\*Figures based on unweighted data

How are estimates affected?

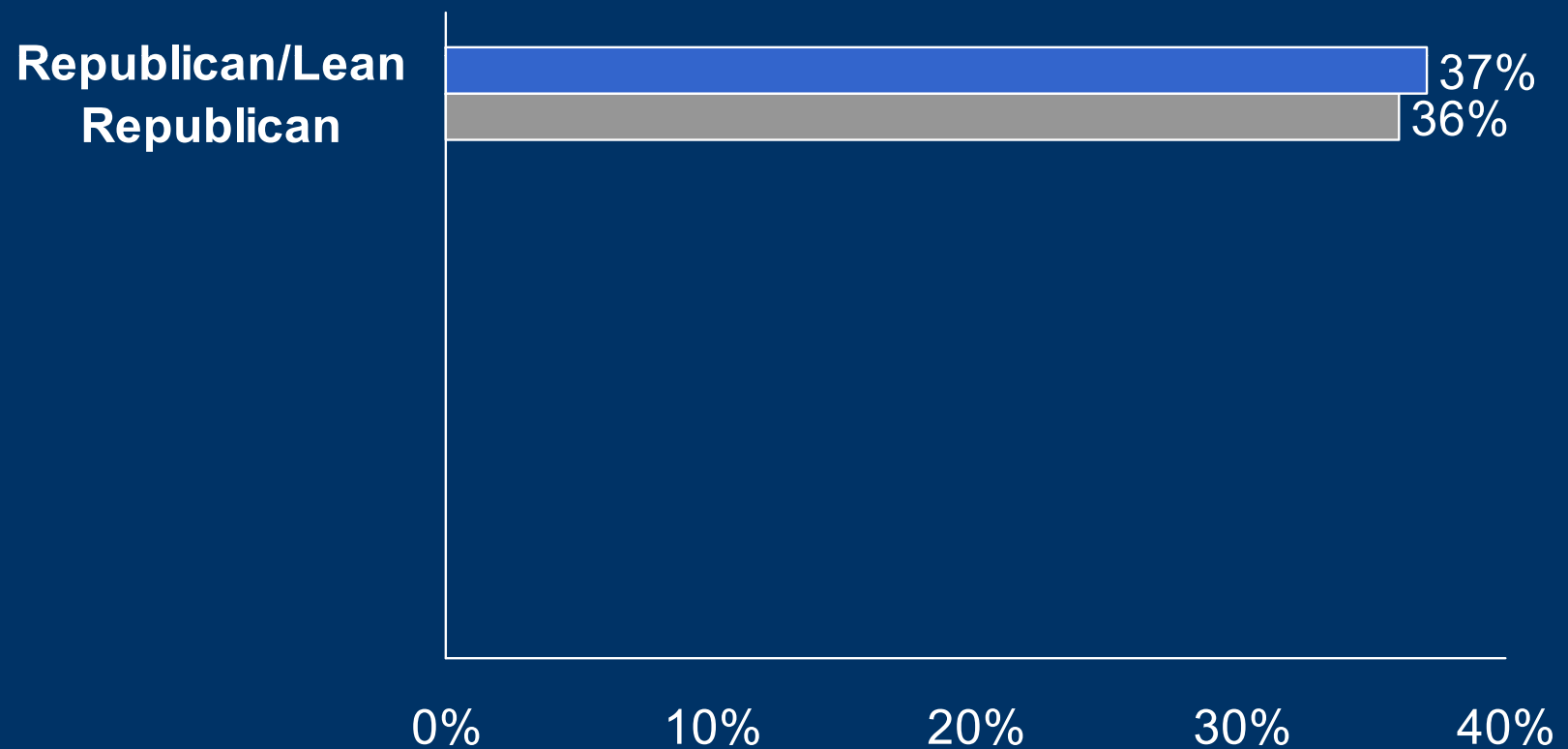
# Impact on Estimates from Including Cell Phones

- Standard landline sample
- Combined landline + cell sample



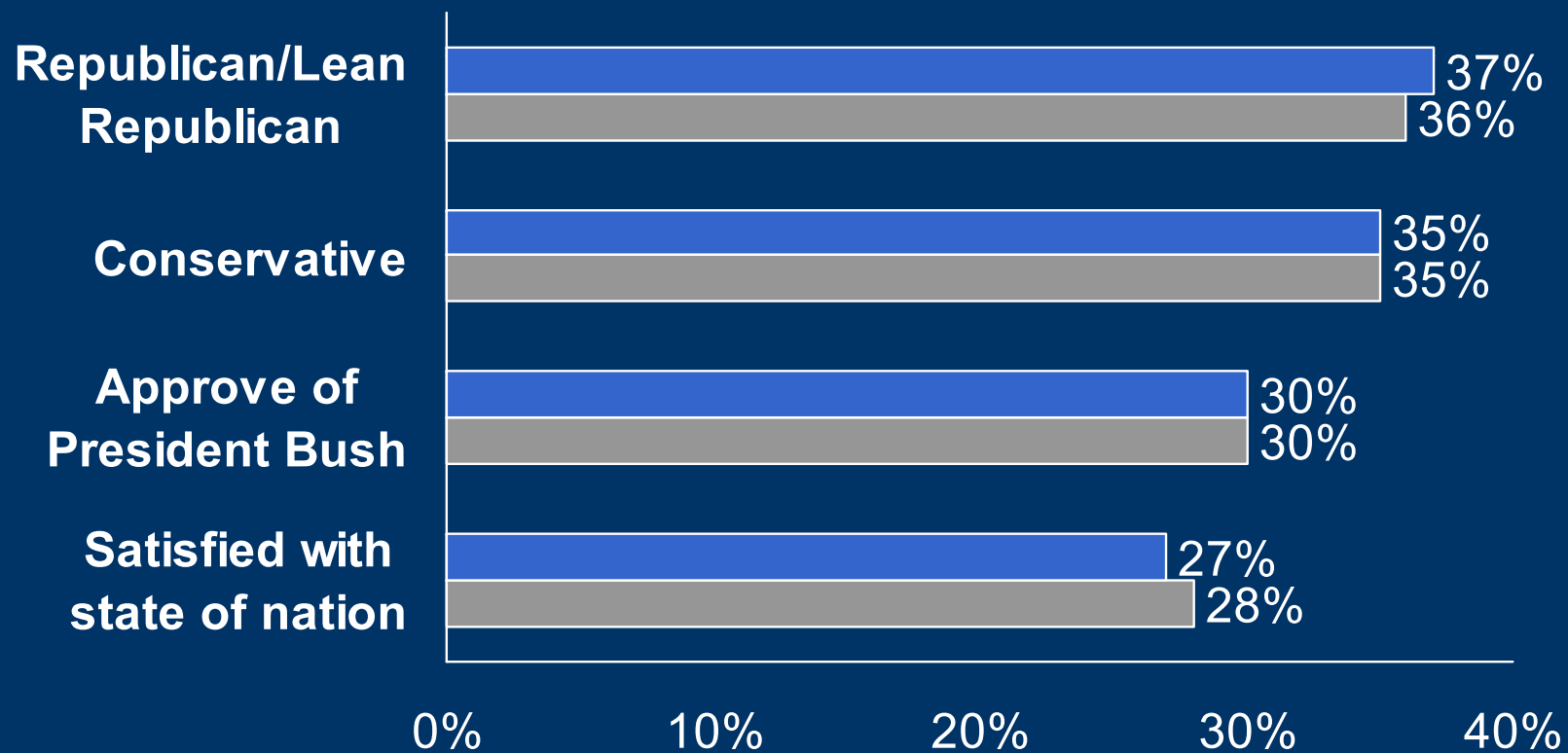
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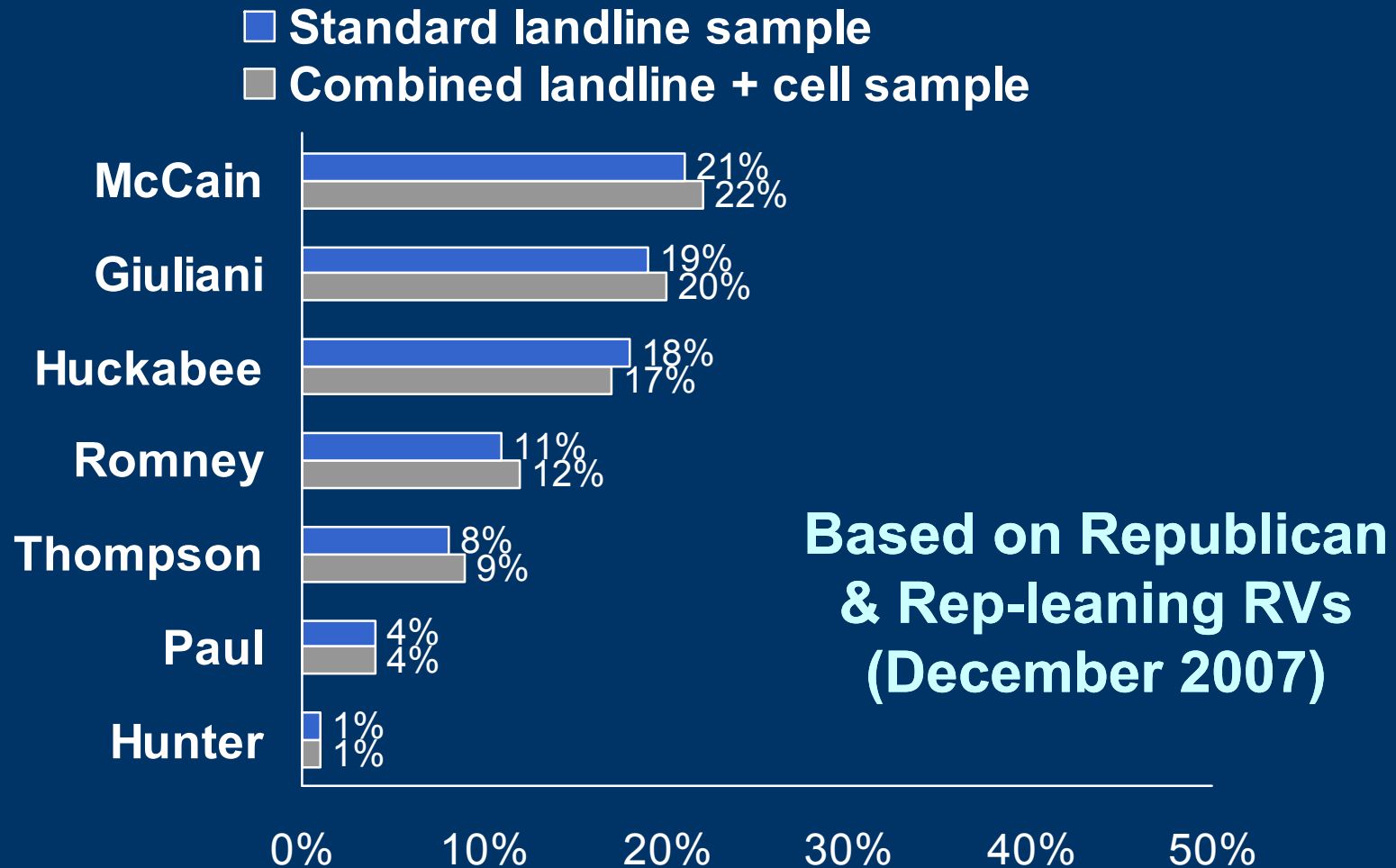


# Impact on Estimates from Including Cell Phones

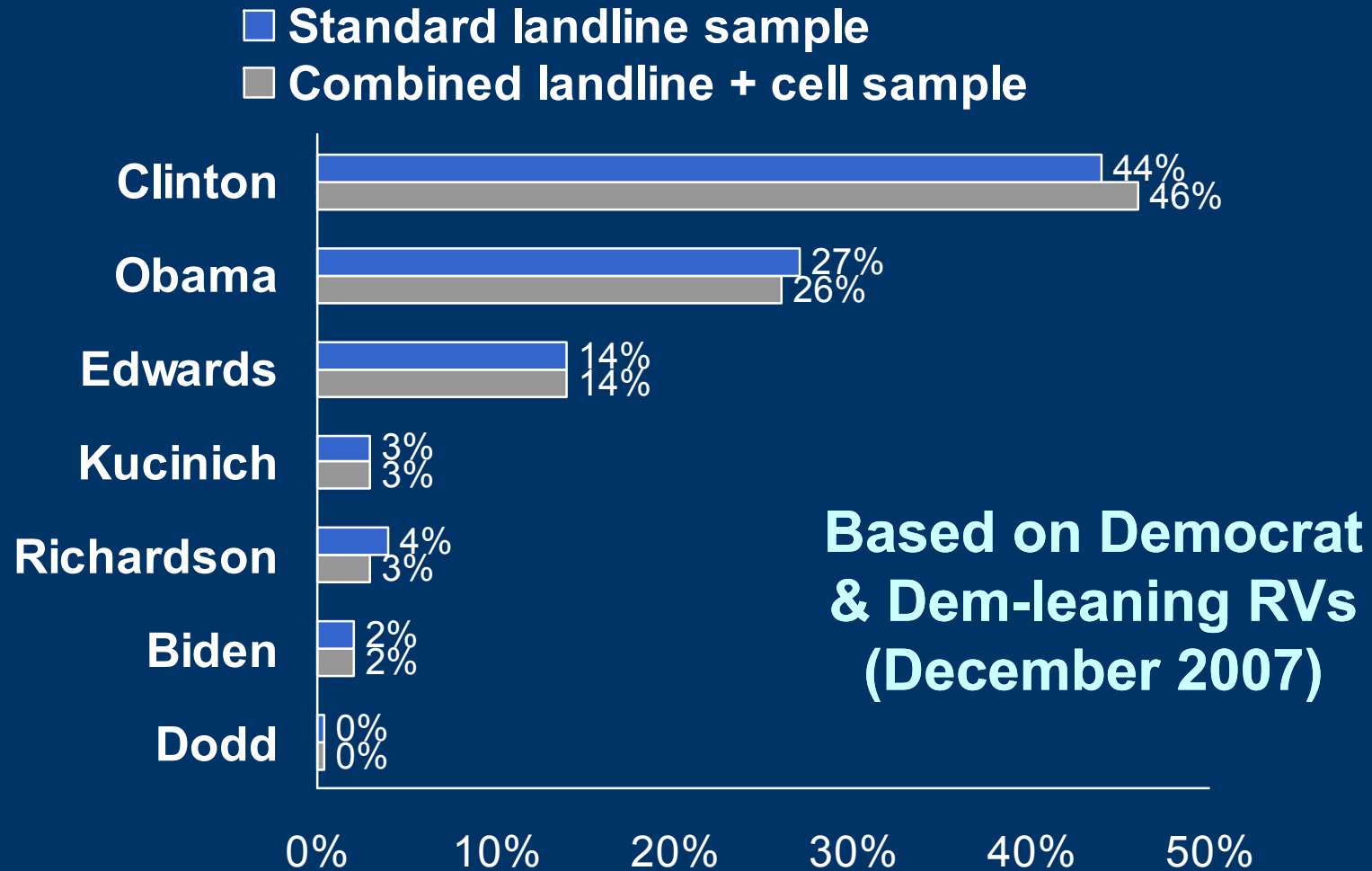
■ Standard landline sample  
■ Combined landline + cell sample



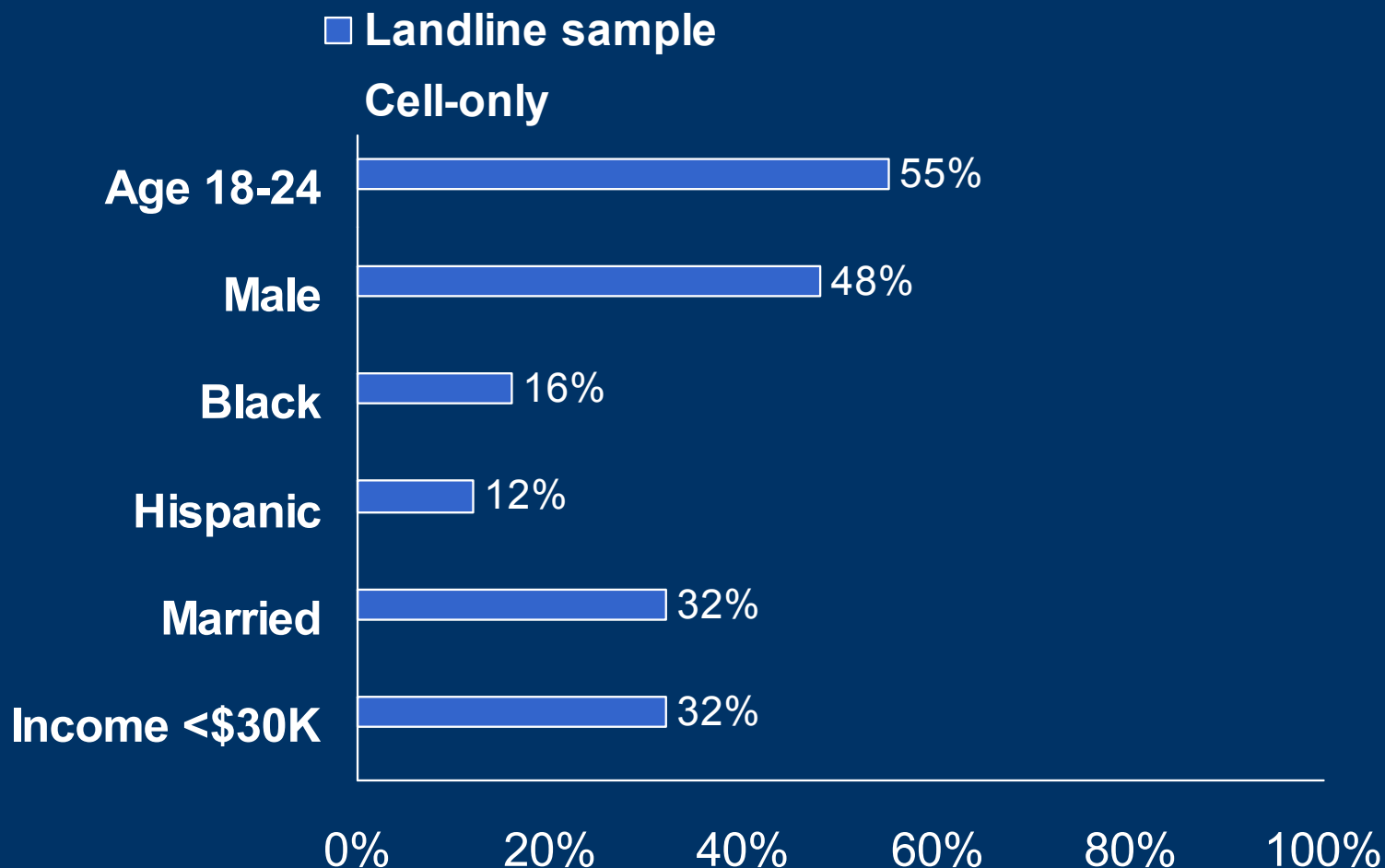
# Impact on Estimates from Including Cell Phones



# Impact on Estimates from Including Cell Phones

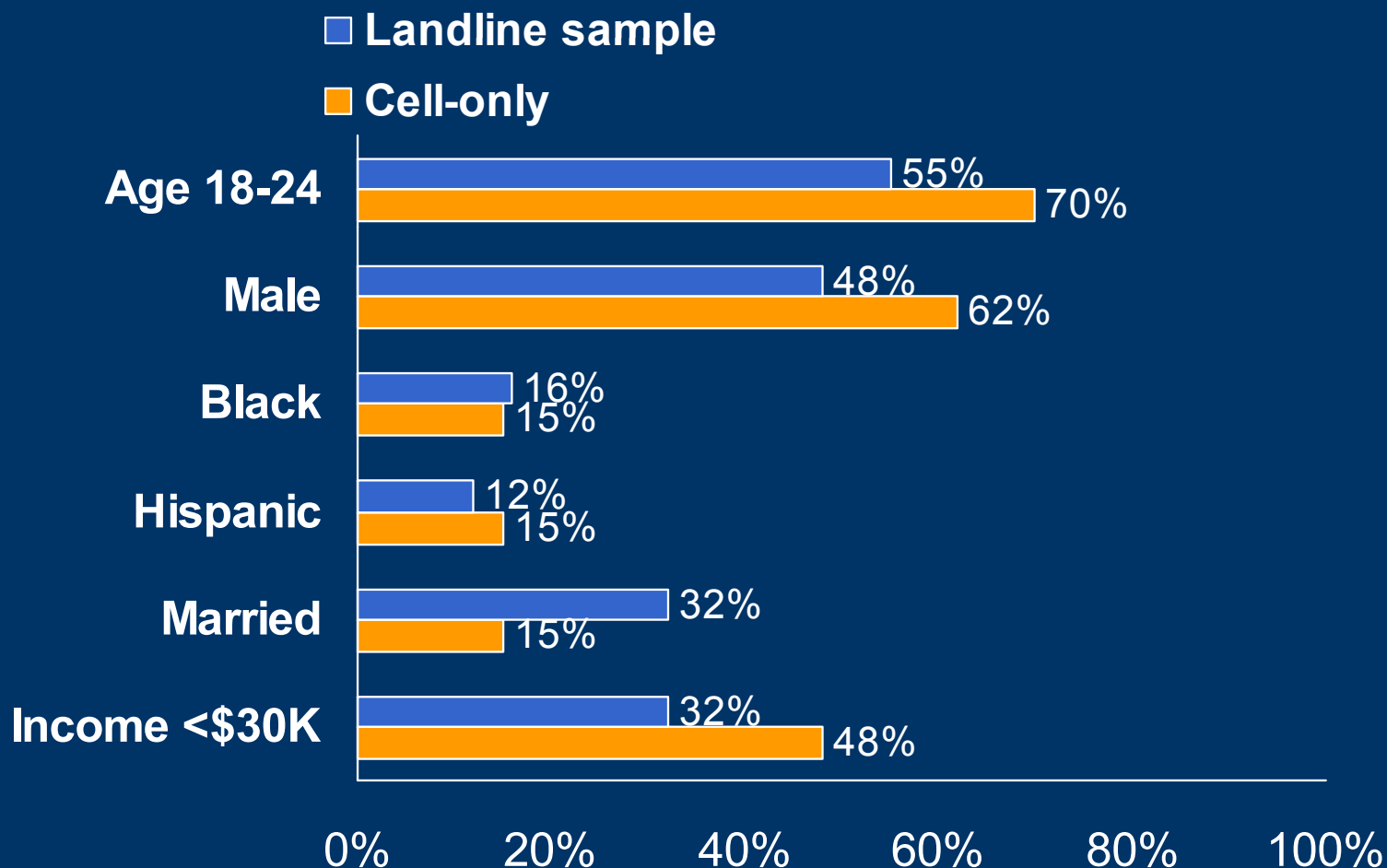


# Under Age 30: Landline Sample and Cell-only Respondents\*



\*Figures based on unweighted data

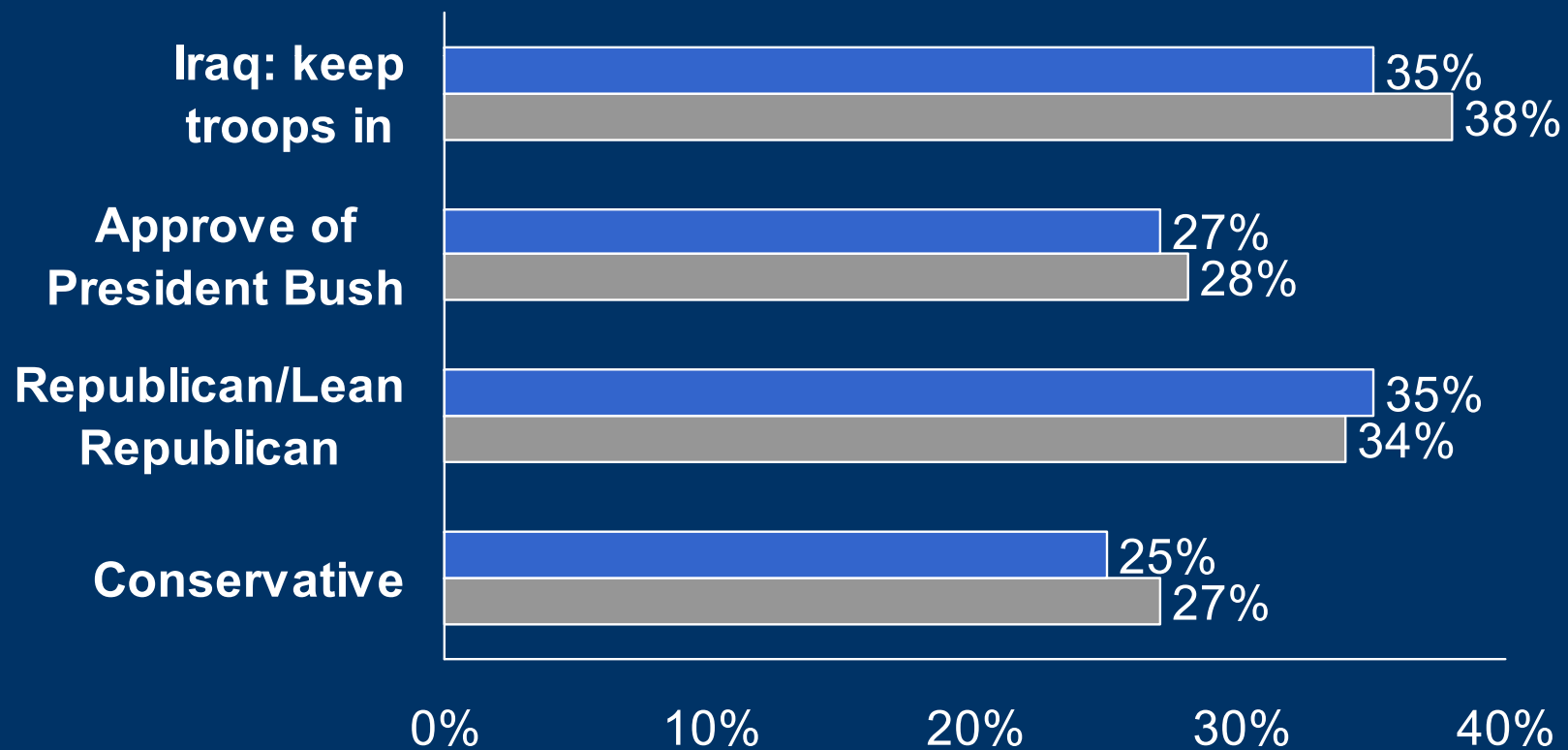
# Under Age 30: Landline Sample and Cell-only Respondents\*



\*Figures based on unweighted data

# Under Age 30: Impact on Estimates from Including Cell Phones

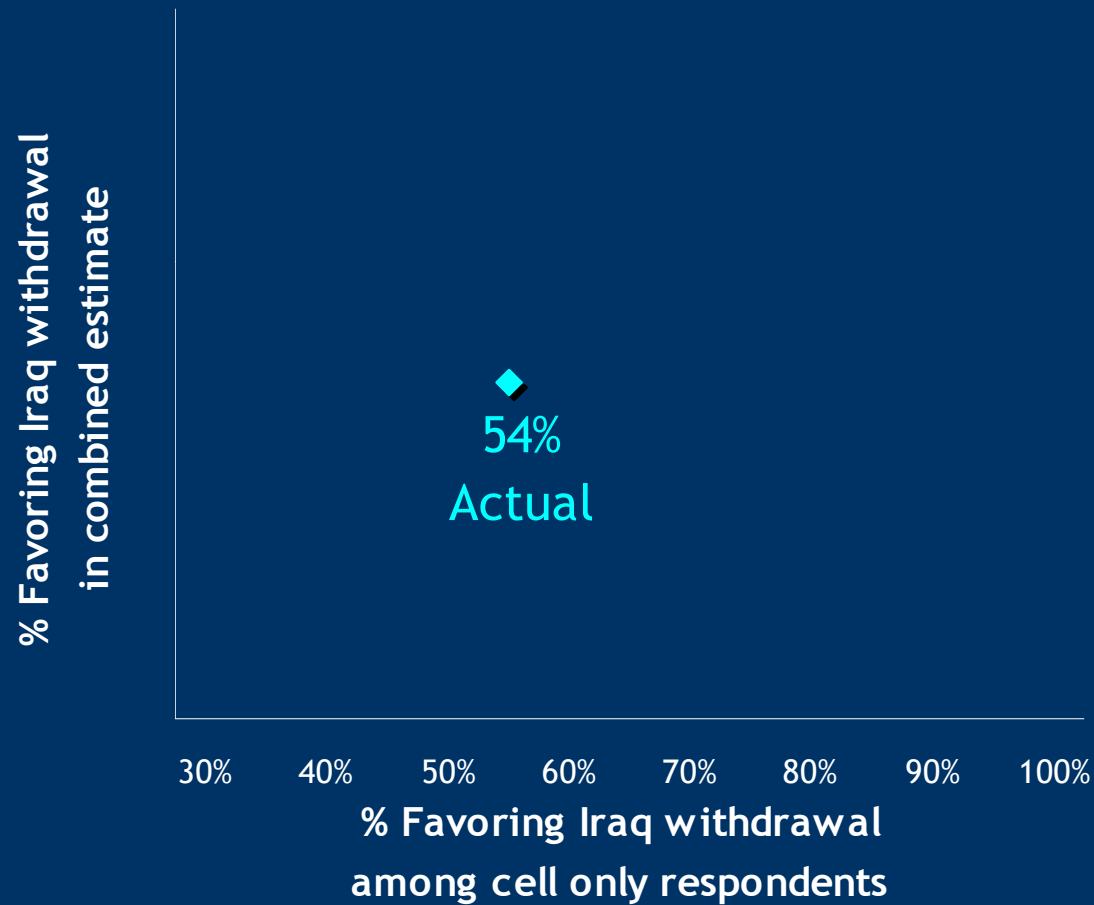
- Standard landline sample estimate for ages 18-29
- Combined landline + cell sample estimate for ages 18-29



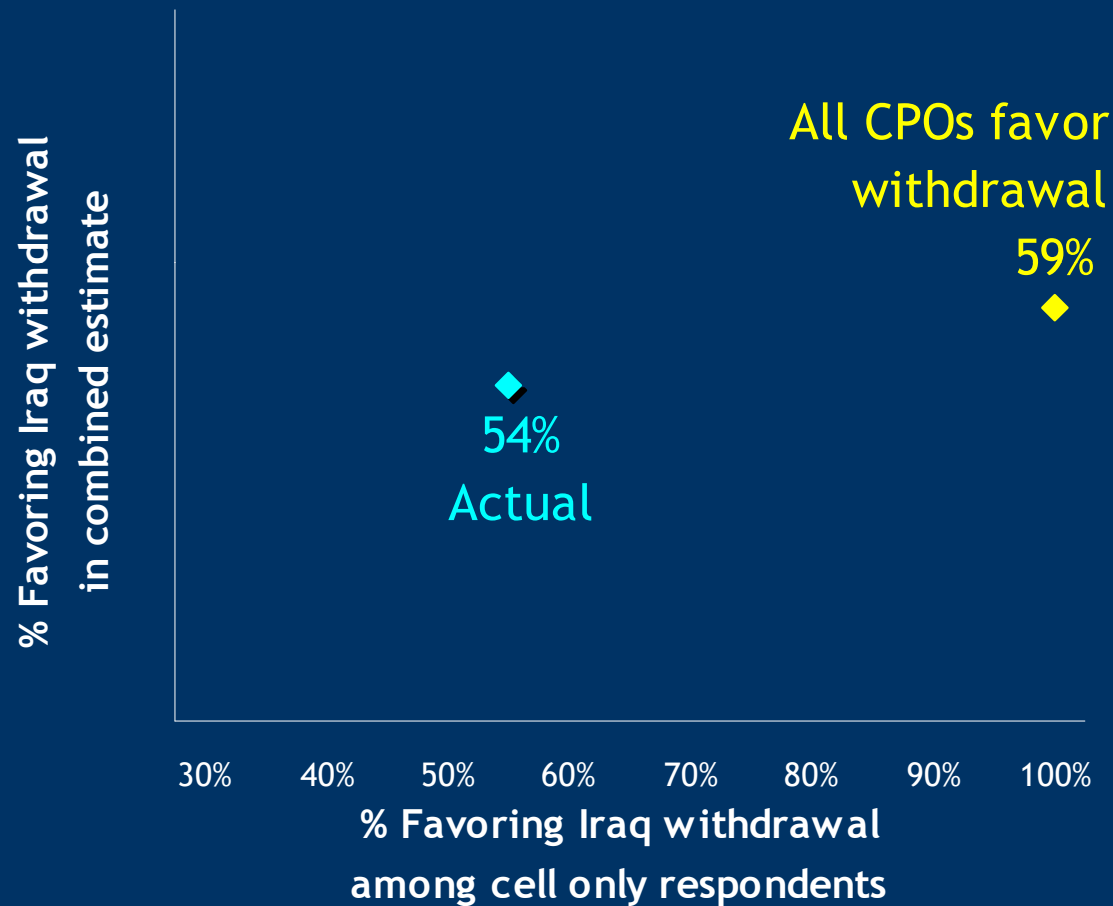
# What's the Potential for Bias?

- Example: % Favoring Iraq Withdrawal
- Is the combined estimate less biased?
  - ◆ Under current conditions
  - ◆ If cell-only adults uniformly favored withdrawal
  - ◆ If few cell-only adults favored withdrawal

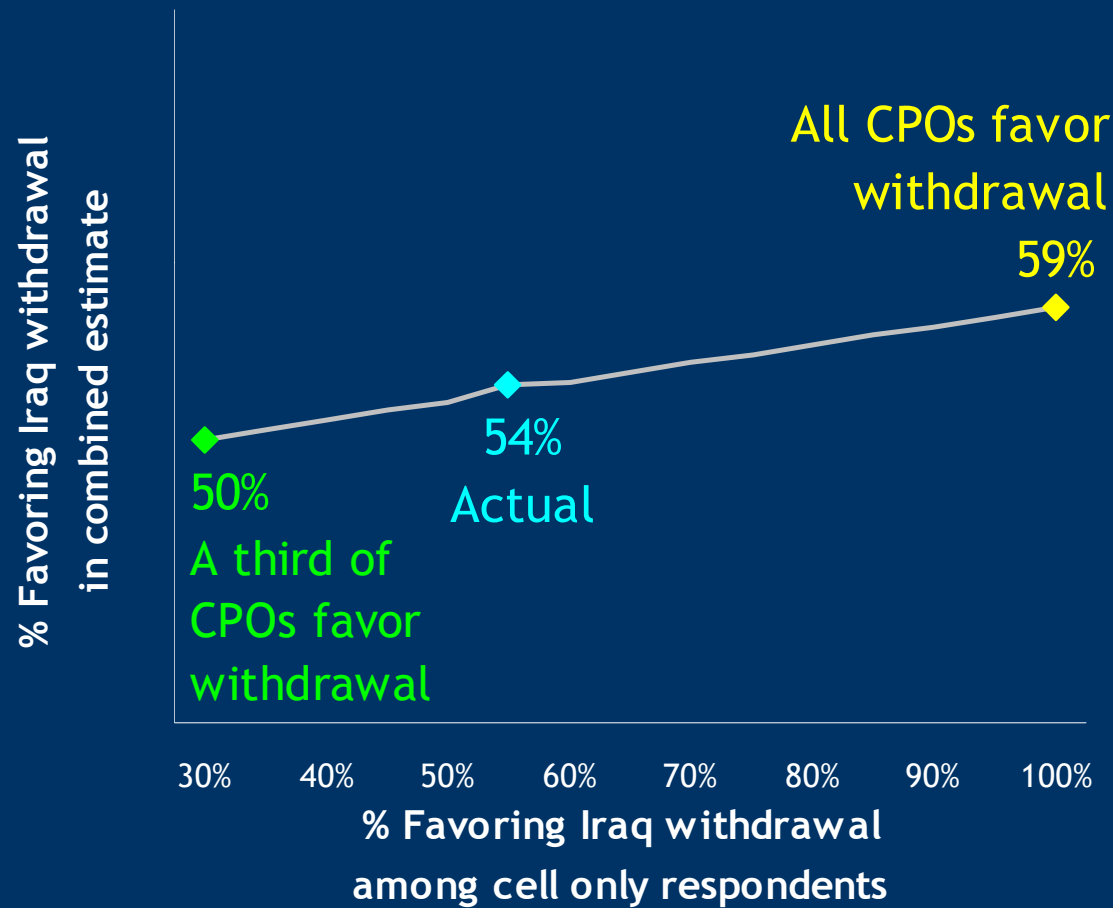
# What's the Potential for Bias?



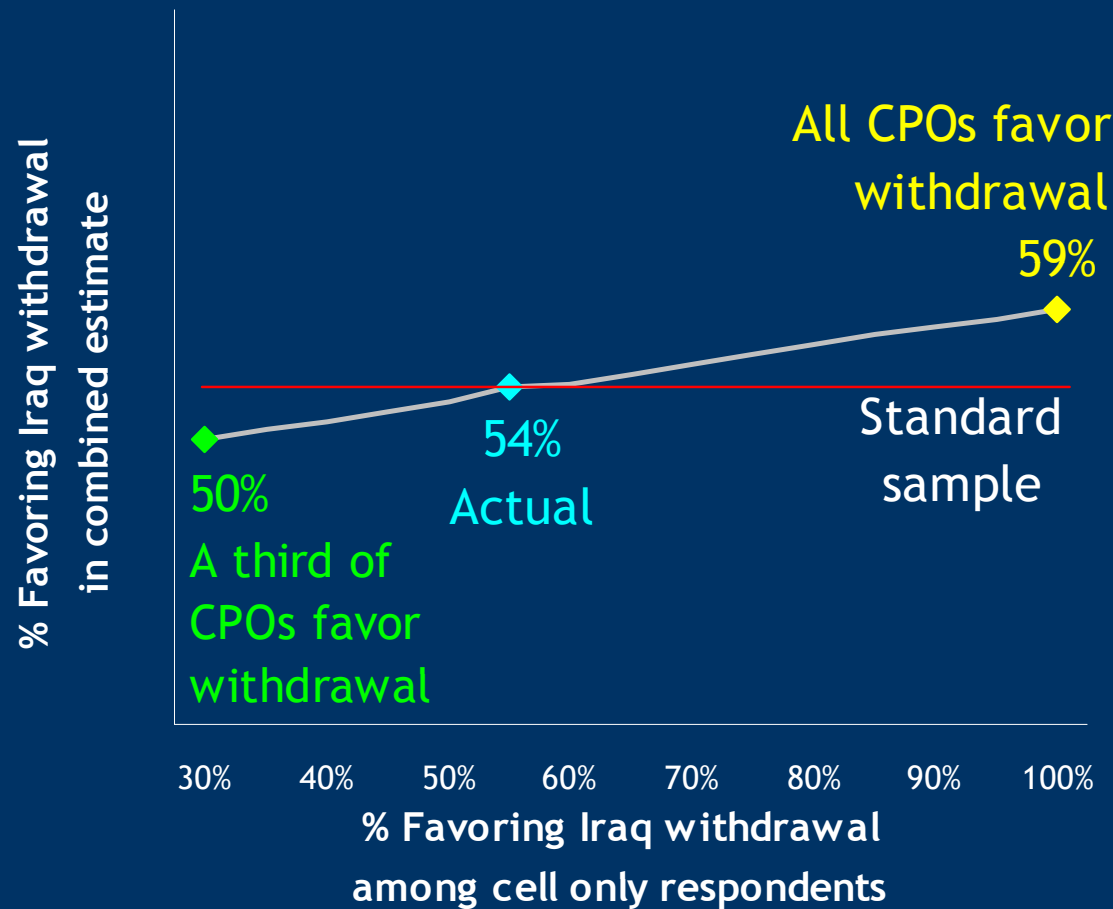
# What's the Potential for Bias?



# What's the Potential for Bias?



# What's the Potential for Bias?



# Benefits of Conducting a Cell Phone Sample

# Estimates for 18-29 yr olds

	<b>Landline sample</b>	<b>Combined sample</b>	<i>diff</i>
% Vote for Obama*	33%	32%	-1
% Democrat	33%	35%	+2
% Parent of minor	32%	29%	-3
% Married	30%	25%	-5
% Own home	44%	43%	-1
Sample size	(314)	(545)	

\* Based on Democratic & Dem-leaning RVs

# Estimates for 18-29 yr olds

	Landline sample	Combined sample	<i>diff</i>	A.C.S.
% Vote for Obama*	33%	32%	-1	--
% Democrat	33%	35%	+2	--
% Parent of minor	32%	29%	-3	20%
% Married	30%	25%	-5	23%
% Own home	44%	43%	-1	52%
Sample size	(314)	(545)		

\* Based on Democratic & Dem-leaning RVs

# Estimates for Blacks

	Landline sample	Combined sample	<i>diff</i>	A.C.S.
% Vote for Obama*	41%	42%	+1	--
% Democrat	60%	58%	-2	--
% Parent of minor	32%	35%	+3	37%
% Married	30%	27%	-3	33%
% Own home	44%	46%	+2	53%
Sample size	(274)	(400)		

\* Based on Democratic & Dem-leaning RVs

# Estimates for Hispanics

	<b>Landline sample</b>	<b>Combined sample</b>	<i>diff</i>	<b>A.C.S.</b>
% Vote for Obama*	12%	15%	+3	--
% Democrat	46%	43%	-3	--
% Parent of minor	50%	46%	-4	47%
% Married	55%	48%	-7	51%
Sample size	(142)	(239)		

\* Based on Democratic & Dem-leaning RVs

# Quality of Responses

## landline versus cell phone interviews

# Quality of Responses

- Are cell phone respondents *more distracted*?

	Landline sample	Cell phone sample
Very distracted	1	2
Somewhat	11	11
Not too	18	14
Not at all	<u>70</u>	<u>74</u>
	100%	100%
	(n=1,507)	(n=500)

Source: October survey

# Quality of Responses

- Are cell phone respondents *less cooperative*?

<i>Respondent's cooperation was...</i>	<b>Landline sample</b>	<b>Cell phone sample</b>
Very good	78	81
Good	15	13
Fair	6	5
Poor/Very poor	<u>1</u>	<u>1</u>
	100%	100%
	(n=1,507)	(n=500)

Source: October survey

# Practical Considerations

Fielding a Supplemental Cell Phone Sample

# Interviewing Rates

	<u>Landline sample</u>	<u>Cell phone sample</u>
Contact rate (2)	84%	83%
Eligibility rate	86%	45%
Cooperation rate (3)	27%	28%
Response rate (3)	23%	23%
Break-off rate	12%	10%

Source: October survey (results for the December survey were highly similar)

# Impact on Costs

- Cell interviews roughly 3x more expensive
  - Manual dialing
  - Reimbursement
  - Lower eligibility rate
    - Many (42%) under age 18
    - Higher incidence of non-English speakers
- *Cell-only* interviews roughly 4-5x more expensive than landline
  - About 35% in cell sample are cell-only

Sample sizes.

Will a combined design yield more interviews with groups relying mostly on cell phones?

# Not if the cost is fixed

	Expected $n$ landline sample	Expected $n$ cell sample	
<b>Standard Design (\$100,000)</b>			
Total sample	2,000	0	2,000
18-29 yr olds	246	0	246
Blacks	212	0	212

# Not if the cost is fixed

	Expected $n$ landline sample	Expected $n$ cell sample	
<b>Standard Design (\$100,000)</b>			
Total sample	2,000	0	2,000
18-29 yr olds	246	0	246
Blacks	212	0	212
<b>Combined Design (\$100,000)</b>			
Total sample	1,100	300	1,400
18-29 yr olds	135	83	218
Blacks	117	45	162

# Conclusions

- The risk of error from exclusion of cell-only adults is increasing
- No evidence of error yet for overall estimates
- Comparable response rates for cell / landline
- Cell interviewing is about 3x more expensive
- Some evidence for gains in estimates for groups relying mostly on cell phones
- Budget permitting, a cell sample may be prudent & boost credibility of findings