WASHINGTON—Charges that election results might be rigged have moved from the fringes of U.S. politics to a central issue in the closing days of the 2016 campaign as Republican Donald Trump has repeatedly and without corroborating evidence suggested a fair outcome may be impossible.

The 2000, 2004 and 2008 elections were hard-fought contests that all contained scattered allegations and conspiracies of fraud or mismanagement—most notably, the largely unsubstantiated claims that the Ohio election results from the 2004 campaign were inaccurate.

But those claims have taken on an official veneer in the 2016 campaign as Mr. Trump has spent the final weeks of the race raising doubts about the integrity of his contest against Democratic presidential candidate Hillary Clinton before most votes have even been cast.

He has accused the media, the Justice Department, the Federal Bureau of Investigation and a “global power structure” of conspiring to rig the November election against him.

At Wednesday’s debate, Mr. Trump alleged that there are “millions of people that are registered to vote that shouldn’t be registered to vote” and cast doubt on whether he would accept the election results.

Democrats, by contrast, have emphasized a more positive message—encouraging people to register and pushing back against the notion that the election will be fraudulent. “Great leaders encourage more democracy, not less,” interim Democratic National Committee Chairwoman Donna Brazile said last week. “Donald Trump is trying to convince voters that their votes don’t count by telling them that the system is rigged. He’s wrong. Voting has never been easier.”

Complaints about election integrity have a long history in American politics. The 1960 election between John F. Kennedy and Richard Nixon brought reports of dead voters casting ballots in Illinois. More recently, several Republican state legislatures have enacted voter-ID laws to combat the possibility of in-person voter fraud.
Still, examples of election fraud are rare. In a comprehensive review of cases between 2000 and 2012, Carnegie-Knight News21 Initiative, a nonprofit journalism project at Arizona State University, found that most related to casting absentee ballots—and even those were exceedingly small. In-person fraud prosecutions were virtually nonexistent, the study found. In another case, Loyola Law School Professor Justin Levitt identified just 31 cases of voter fraud between 2000 and 2014 out of more than one billion ballots cast.

Asked on MSNBC Wednesday about whether there would be large-scale fraud on Election Day, Mr. Trump's campaign manager, Kellyanne Conway, said: "No, I don't believe that."

The history of concern about election integrity isn’t limited to one party, although the losing candidates have consistently accepted the results and conceded to their opponents.

In 2004, John Kerry acknowledged his loss to President George W. Bush, though many activists and some Democratic politicians pointed to election-night problems across the key swing state of Ohio, a state that would end up being the decisive contest in a close election.

Four years earlier, Democrat Al Gore accepted the U.S. Supreme Court’s decision to halt a Florida recount, conceding the 2000 election to Mr. Bush and ending a prolonged postelection drama.

The 2004 election in particular looms large in conspiracy-theory lore as the most recent example of a "rigged" election, with allegations of irregularities across Ohio. Many pointed to Ohio Republican Secretary of State Ken Blackwell holding a symbolic position on the Bush campaign as a conflict of interest. Mr. Blackwell declined to comment. Others noted that several executives from companies that provided electronic voting machines were supporters of Mr. Bush.

House Democrats wrote a report in 2005 detailing "numerous, serious election irregularities" in Ohio's presidential vote, such as long lines at Democratic-leaning polling places, problems with provisional ballots and other issues. In addition, the report detailed some errors in the computerized voting machines but couldn’t substantiate whether they were glitches or the result of intentional tampering.

Conspiracies were further fueled by the death of a Republican information-technology consultant in 2008 who was set to testify in a lawsuit alleging vote rigging in Ohio. No foul play has ever been identified in the consultant’s death.

Bob Shrum, a veteran Democratic strategist who served in top positions on both the Gore and Kerry campaigns, said that the only response from a losing candidate even in the result of potential election irregularities should be to gracefully concede to preserve the stability of the political system.

“I privately believed that there could be questions about it, but it didn’t matter,”
said Mr. Shrum about the 2004 Ohio results. “You weren’t going to go into a long litigation about this that would have torn the country apart.”

In the 2000 election, the calculation was similar for Mr. Gore, who won the popular vote but lost by a 537-vote margin in Florida. Subsequent unofficial recounts by media outlets suggested that under some vote-counting standards, Mr. Gore would have won the recount and therefore the election.

“There’s no question that I believe and Gore believed that he had won the election. But after the Supreme Court decision and under the rule of law, you accept the results and you concede,” Mr. Shrum said.

Mr. Trump isn’t the first Republican presidential candidate to raise the issue of potential voter fraud.

In 2008, Republican John McCain warned that the now-defunct community-organizing group Acorn was about to perpetuate one of the “greatest frauds in voter history,” pointing to many inaccurate voter registrations collected by the group.

Mr. McCain, who conceded after losing the popular vote by more than 7 percentage points, is “nothing like what we’ve seen from Trump,” said Rick Hasen, a law professor at the University of California, Irvine, who is an expert on election law.

Mr. Trump has “taken the issue and made it the central focus of his campaign,” said Mr. Hasen.

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