UNITED STATES DEPARTMENT OF COMMERCE
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To: Allison Plyer
Chair
Census Scientific Advisory Committee

From: Ron S. Jarmin
Acting Director
U.S. Census Bureau

Subject: Recommendations and Comments to the U.S. Census Bureau from the Census Scientific Advisory Committee Spring 2021 Meeting

The U.S. Census Bureau thanks the Census Scientific Advisory Committee for its recommendations. We are responding to the committee recommendations submitted during its 2021 Spring Virtual Meeting on March 18-19, 2021.

Your feedback is welcomed to ensure that the Census Bureau continues to provide relevant and timely statistics used by federal, state, and local governments, as well as business and industry, in an increasingly technologically oriented society.

Attachment

Recommendations and Comments to the Census Bureau
from the Census Scientific Advisory Committee
Spring 2021 Meeting

To: Ron Jarmin
Acting Director
U.S. Census Bureau

From: Allison Plyer
Census Scientific Advisory Committee (CSAC) Chair

Subject: Recommendations and Comments to the Census Bureau from the Census Scientific Advisory Committee Spring 2021 Virtual Meeting

March 18-19, 2021

The Census Scientific Advisory Committee (CSAC) thanks the Census Bureau for their tremendous efforts organizing yet another virtual meeting of the CSAC. The Advisory Committee staff assembled a number of technologies that worked quite effectively to meet CSAC's mandate to generate and complete our recommendations while participating from remote locations. The technologies included redundancies in case of outages and required significant levels of staffing to ensure all worked well. The CSAC appreciates these important efforts and looks forward to a day, hopefully soon, when we can meet in person again.

I) Differential Privacy

CSAC was pleased that Acting Director Jarmin highlighted in his initial remarks the importance of Differential Privacy (DP) as a theme that weaves throughout all aspects of the Census Bureau's operations and estimation. While DP was not on this agenda for this meeting, CSAC recognizes its significance as a cross-cutting issue and calls attention to it throughout our recommendations here, as appropriate.

In addition, the CSAC is concerned that because certain decisions related to the Privacy Loss Budget (PLB) will be made in June and CSAC is not meeting again until September, any recommendations that the CSAC DP working group might formulate cannot be presented to the full CSAC (and thus to the Bureau) until after these decisions about the PLB are made. There are many examples of how the implications of the PLB will ripple through uses of 2020 Census data. For example, given that most programs and services for children are provided at the state and local level, CSAC remains concerned that the PLB allocation supports accurate statistics for population subgroups and small geographies for maximal utility.

1) CSAC recommends that the Census Bureau hold a public meeting of the CSAC before June so that the DP working group can present draft recommendations to CSAC and CSAC can make official recommendations in regard to DP before PLB decisions are made.

Census Bureau Response: *A special session of CSAC to hear differential privacy-related recommendations is scheduled for May 25, 2021 at 11:00am EDT.*

II) 2020 Census Operational Review

CSAC would like to thank the 2020 Census team for their presentation and great efforts on the 2020 Census in spite of unprecedented difficulties. There were many successful outcomes, including higher overall self-response rates than during the 2010 Census. CSAC also appreciates the continued dedication to data quality from the 2020 Census team. In particular, CSAC welcomes transparency efforts involving the release of quality metrics, blog posts, and the engagement with professional and scientific organizations. One area of concern in terms of quality is avoiding undercounts in geographies with low self-response rates, such as rural areas where people of color are a majority (see lower self-response rate in 2020 when compared to 2010 for counties where people of color are a majority that have a population of less than 50,000).

1) Looking forward, CSAC recommends that research be conducted to better understand the reasons behind different geographies increasing or decreasing self-response rates when compared to the 2010 Census. It would be important to separate, if possible, causes related to the pandemic from those related to technology or other causes, such as the level of community outreach, presence of media outlets, and presence or lack of nonprofit partner organizations. The goal in particular would be to leverage lessons learned from areas with increases in self-response rates and understand challenges in areas with lower self-response rates in order to address them in future surveys including the American Community Survey and the 2030 Census.

Census Bureau Response: *The Census Bureau thanks the CSAC members for their continued support for and recognition of efforts across the agency to conduct the 2020 Census while continuing other essential work. We agree that it is important to better understand increasing or decreasing self-response rates when compared to the 2010 Census. Variability in self-response rates across different geographies is expected. Factors in our control such as planned changes to the way we collected data, as well as factors outside our control, such as normal changes in our population, respondent behavior, and COVID-19 all play a part.*

Attributing a difference or magnitude of a difference to a specific factor, however, will be nearly impossible. Rather, our analysis will focus on understanding if the differences we see are explainable given the collective factors.

Subject matter experts are conducting retrospectives of the 2020 Census operations, discussing lessons learned, and documenting results in operational assessments. The lessons we learned and the analysis we perform around factors such as those included in this recommendation will be shared with the American Community Survey and will factor into planning for the 2030 Census.

2) CSAC also recommends the Census Bureau consider conducting research on any impact the 2020 Census operations and the events of 2020 had on the Census Bureau's reputation and public perceptions to inform efforts that may be needed to rebuild trust in the Census brand in order to optimize ACS and other survey response rates going forward.

Census Bureau Response: *The Census Bureau accepts this recommendation. As funding permits, the Bureau will examine ways to measure public perception of the Census brand as a result of 2020. Under the planned strategic communications and digital services contract, the Bureau will have access to support for brand analysis, market research & listening, and audience media and content analysis, all of which can help to determine if any actions are needed to strengthen the Census brand, positively impacting survey response rates.*

3) In future meetings, CSAC would like to learn about quality metrics from the 2020 Census (e.g., how people were counted by geography: self-response, NRFU, administrative records), and patterns of use of the Internet self-response (e.g., platform used (mobile vs. desktop), drop-off points, multiple attempts, by demographic groups).

Census Bureau Response: *The Census Bureau thanks the CSAC for their interest in 2020 Census data quality and accepts this recommendation. In the years that follow each decennial census, the Census Bureau releases metrics evaluating the quality of data collection operations and resulting population data in a series of assessment and evaluation reports. The topics of these reports vary widely, including assessments of each data collection operation, assessments of communication and outreach methods, and evaluations that analyze, interpret, and synthesize the effectiveness of census components and their impact on data quality, coverage, or both. In addition, the Census Bureau is engaged in efforts to assess the quality of the census, including comparing 2020 Census results to 2020*

Demographic Analysis estimates, conducting the Post-Enumeration Survey to measure coverage error, and collaborating with external experts who will provide independent quality analyses. We look forward to future meetings of the CSAC where we can share the results of these efforts with you.

4) CSAC would also like to understand what lessons can be learned from other countries' census operations, and to hear more about planning for the 2030 Census in regard to a possible person-based rather than household-based frame, and the possibility for greater use of administrative records.

Census Bureau Response: *The Census Bureau accepts this recommendation and the desire to hear more about the possibility of a person-based frame and greater use of administrative records. Early planning efforts for the 2030 Census are underway. Our experiences with the 2020 Census are informing and shaping the path forward. We welcome the opportunity to present the vision, guiding principles, and information on early planning efforts for the 2030 Census at a future CSAC meeting.*

The Census Bureau has benefited greatly from engagements with other countries as they plan, conduct, and evaluate their censuses. Most recently, we have had a number of opportunities to share our experiences conducting the 2020 Census in the midst of a global pandemic to assist other countries as they plan and conduct their census operations.

III. Post-Enumeration Data Processing Status

CSAC applauds the Bureau's efforts to ensure data quality through well-developed and tested processing methods. CSAC recognizes that such post-processing takes time and that anomalies will arise. Every Census includes new methodologies not yet tested at full scale, and the 2020 Census no exception. Every complex operation encounters some unanticipated scenarios, and 2020 offered unprecedented challenges. Further, bugs happen even in well-developed, tested software.

An active area of computer science research is construction of "bug-sniffing" software that automatically detects bad code. Such software either looks for specific types of common bugs or uses statistical machine learning/artificial intelligence techniques to classify good and bad code. Further developments in this field may be increasingly helpful for Bureau operations.

1) CSAC recommends that the Bureau investigate the use of such bug-sniffing software for its processing code, in particular determining if existing bug-sniffing software might have detected any of the errors found so far in the post-processing code.

   Census Bureau Response: *The Census Bureau agrees with this recommendation and will research the possible application of this class of software for census processing.*

2) Further, CSAC recommends that earlier iterations of the post-processing code be made available to the research community as test cases.

   CSAC also notes that data processing is inextricably linked with data quality. At the Fall 2020 meeting, CSAC concluded that the compressed post-processing timeline proposed at that time (on top of pandemic conditions, natural disasters and other disruptions, and late process changes) threatened the accuracy of the 2020 Census. Several of CSAC's Fall 2020 recommendations involved extending the processing timeline, including the recommendation "…that the Census Bureau have the time [the full six months] it requested in April 2020 to execute its full battery of data checks to reduce the risk of failing to identify key errors and generate final 2020 Census products that are of comparable quality to previous decennial censuses." The current processing timeline is consistent with Fall 2020 CSAC recommendation.

   The tight coupling of post-processing and data quality is reflected in the scope of the external reviews by JASON, by the American Statistical Association Quality Indicators Task Force, and by the engagement with the National Academy of Sciences Committee on National Statistics. CSAC applauds the Bureau's extensive implementation of external review processes and dissemination of results, including the regular blogs on post-processing and data quality. CSAC finds that these blogs are excellent: timely, relevant, concise, and accessible.

   CSAC supports the Bureau's dedication to external review in collaboration with expert professional organizations.

   Census Bureau Response: *The Census Bureau appreciates the committee's continued support for both the processing timeline and the implementation of external data quality reviews. However, we cannot agree to share earlier iterations of the post-processing code with the research community, as data security and confidentiality requirements would not allow this sharing.*

3) CSAC recommends that external review processes should be formalized and codified, so that the review processes are expected, and the reviewers can maintain their independence.

   Anomalies such as those discovered by the Bureau during processing to date are expected but minimizing the number of such issues discovered at run time is of course desirable.

   Census Bureau Response: *The Census Bureau agrees with this recommendation. The external expert effort with the National Academy of Sciences Committee on National Statistics will follow the well-established process that is used for consensus panels. Details on this process can be found on their webpage: Our Study Process | National Academies. The American Statistical Association independently determines its processes and metrics, as well as the contents of the reports they will release. Regular updates and additional details are posted on the ASA website and questions on further details should be directed to Steve Pierson, ASA Director of Science Policy, pierson@amstat.org Updates on the 2020 Census Quality Indicators (amstat.org)*

4) CSAC recommends that the Bureau systematically expand its suite of test cases for assessing its post-processing software. This suite of test cases ("Anomaly town, USA") should include difficult cases observed in actual processing, along with artificial cases simulated to allow extensive exploration of the error space. Edge cases (extreme errors in one dimension) and corner cases (extreme errors in multiple dimensions) are of interest, as are various types of duplicate records and large-scale disruptions of records. The correct processing output (either tabulations or routing for further processing) is known for the test suite, so it can be used for pre-testing of processing software as well as for regression testing, in which corrected code is re-tested after a bug is fixed, to ensure that no new errors have been introduced.

   CSAC is concerned that a possible source of unexpected actions by respondents and enumerators in the 2020 Census is the concept of usual residence, e.g., "Does this person usually live or stay somewhere else?" The standard definition of "usually" means "under normal conditions, or generally," and might have been hard to recognize during 2020 conditions. A potential source of confusion is the temporal window that defines "usually." Any confusion about this definition could differentially affect populations that are already mobile (such as college students and snowbirds) but had additional displacements due to pandemic conditions. Cognitive testing might help to understand the impacts of these disruptions on understanding of usual residence by respondents and interviewers.

Census Bureau Response: *The Census Bureau accepts this recommendation. The operational assessments for the 2020 Census operations will include examination and documentation of the data processing and field data collection challenges, including those mentioned above.*

We will use these assessments to help establish research objectives and operational improvements for the 2030 Census. The intent is that those improvements can address our communications to the public, as well as our training for field enumerators. Our rigorous mid-decade testing will help us finesse our messaging and training.

5) CSAC recommends revised guidance for respondents and enumerators for future decennial censuses that specifically includes some of the kinds of disruptions observed in 2020.

Census Bureau Response: *The Census Bureau accepts this recommendation. The operational assessments for the 2020 Census operations will include examination and documentation of data collection challenges faced during the 2020 Census. From that work, we will establish research objectives and operational improvements for the 2030 Census that will help us be prepared for future challenges, such as improved communication with the public and improved training for field enumerators.*

6) CSAC requests further information on any anomalies related to the processing of college students, snowbirds, and similar populations. CSAC is particularly interested in any methods the Bureau will use to assess the quality of the enumerations of these mobile populations.

Census Bureau Response: *The Census Bureau identified 3 anomalies related to the processing of college students, snowbirds, and similar populations. In general, the resolution of these anomalies reallocated people among group quarters (e.g., dorms, prison buildings) within a common facility (university, prison facility), removed some people in GQs because of reporting errors, or implemented GQ count imputation on some GQs that were still unresolved, according to our definition. We also performed an additional round of unduplication in both the household and group quarters populations that brought population counts closer to benchmark population data for some areas with substantial numbers of seasonal migrants where we suspected there was duplication. We believe that all of these patches improved quality.*

7) How will the Bureau know they have correctly enumerated college students, for example? CSAC requests a one-way briefing or presentation at the Fall 2021 meeting on efforts to correctly count college students and snowbirds once, only once, and in the right place for the 2020 Census.

   CSAC notes that the need for assessment of post-enumeration processing, resolution of anomalies, and transparent dissemination of methods and results will continue through all stages of processing, including the application of differential privacy in the new disclosure avoidance system.

   Census Bureau Response: *Enumerating college students in the correct place depends on many things: whether the university provided current accurate lists for all their dorms and residences (including off campus); whether the parents and students placed them(selves) at another location like the parents' homes; whether one of the potential parties who included them responded to the overcount question on the census form; etc. The Census Bureau has plans to assess the Response Processing Operation.*

   Similarly, we will assess operations like Coverage Improvement and count imputation. The former will look at the frequencies or percent of responses that answered the undercount or overcount questions, how many cases we called, how many households we reached, how often we added or removed a person and how many, etc. Similarly, count imputation assessment(s) will provide frequencies of unresolved cases by the several types, how they ended up after imputation, how many occupied and vacant housing units were created, how many people were added through imputation, etc.

   The Census Bureau would be happy to brief the CSAC on this important topic in the future.

8) As these processes are entirely new during this decennial census, CSAC recommends that the Bureau continue to take the time necessary to ensure quality processes.

   Census Bureau Response: *The Census Bureau agrees with this recommendation.*

IV. Post-Enumeration Survey Update

CSAC commends the Census Bureau for its efforts to date in fielding the Post-Enumeration Survey (PES) under the trying circumstances presented by the pandemic.

Recommendations and Comments to the Census Bureau
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1) Given that the delayed NRFU operations may have had an adverse effect on census data quality and that the delayed PES operations have the potential to result in overestimates of census error, CSAC recommends that the Bureau explore the contribution of data collection month from both operations (and their interaction) to the logistic regression models of match probability and correct enumeration probability.

   As outlined in the Census Bureau's presentation, the 2020 coverage measurement will include a correction for correlation bias based on differences in the sex ratios for selected population subgroups obtained from demographic analysis (DA) and the PES. For the 2010 census, DA also found a greater net undercount of young children than did the coverage measurement survey, suggesting that correlation bias may have affected the results from the latter.

   Census Bureau Response*: The Census Bureau does not accept this recommendation. We welcome the suggestion of covariates to add to the logistic regression models. Since there was very little overlap between the data collection periods for the 2020 Census and the PES Person Interview, including month of data collection in the logistic regression models is not feasible, only variables with common values in both the PES and census can be used in the logistic regression models.*

2) CSAC recommends that the Bureau investigate differences between the DA and dual-system estimates of young children as evidence of correlation bias and, if such evidence is found, explore adjustment strategies similar to the correction for differences in sex ratios. Such an adjustment might make use of child to woman ratios or ratios of younger to older children, given that the census seems to estimate older children reasonably well but undercount younger children.[1]

   Census Bureau Response: *The Census Bureau accepts this recommendation and welcome specific suggestions of ways to reduce correlation bias for young children. It is our perspective that a defensible correlation bias adjustment should be stable across the various demographic analysis series. The adjustment should also be stable across various age groups. Additionally, is should be noted that the amount of time for research into refining and operationalizing the suggested methods is limited. The development for the estimation systems is complete and testing is underway, so time for research and changes are limited. If*

[1] Based on DA, the 2010 Census undercounted children under age 5 by 4.6 percent; undercounted children 5 to 9 by 2.2 percent; and overcounted children 10 to 17 by 0.5 percent (U.S. Census Bureau, "The Undercount of Young Children," February 2014.

we detect correlation bias for young children and have a defensible correlation bias adjustment, we will implement it.

3) CSAC would like to know how the Bureau will apply lessons from the 2020 efforts to improve the count of young children to other surveys, such as the American Community Survey (ACS), as the Bureau's research has demonstrated that the undercount of young children is pervasive in its household surveys. The Census Bureau is conducting a test panel over the next few years, but there is little focus on young children, particularly on the wording of the rostering question, which is one potential source of the undercount.

Census Bureau Response: *The Census Bureau accepts the recommendation to apply lessons from the 2020 Census efforts to improve the count of young children in the ACS, as well as other surveys. For some time before the 2020 Census, work was underway that directly addressed this topic in the form of a dedicated internal task force, which was focused on improving the count of young children. Recommendations from the task force fed into a proposal to test modified roster questions for the ACS. The topic of rostering household members will be included in the upcoming 2022 ACS Content Test. Staff from across the Census Bureau, including members of the task force and decennial staff, as well as staff from other federal agencies, are providing their expertise and prior research experience to develop and test new rostering questions. The new rostering questions will include specific probes directed at the omission of children. The team has also discussed possible future research in the use of administrative data to identify missing household members (such as young children) and improve household roster counts.*

In addition to the 2022 ACS Content Test, the Census Bureau will be applying knowledge gained from the Post-Enumeration Survey (PES) and 2020 Census efforts related to counting young children. The Census Bureau plans to ask debriefing questions of respondents in early decade tests to understand the effectiveness of probes, in conjunction with the roster question, to improve the undercount of young children. The results of these efforts will be shared across demographic surveys from the Census Bureau ACS and Demographic Research Group as well as various research seminars.

The Census Bureau looks forward to continued work in this area.

4) CSAC recommends the Bureau produce a report with the analysis of the overall impact of the many commendable changes that the Bureau in 2020 to address the undercount (including but not limited to operations, question wording, communications, and outreach

strategies). The CSAC concurs with the suggestion of the Partnership for America's Children to establish a task force that will focus on data for young children across varied Census Bureau programs.

Census Bureau Response: *The Census Bureau accepts this recommendation. We have a robust Evaluations and Assessments program. As part of that program, dozens of assessment reports will be written describing how well various aspects of the 2020 Census achieved their goals and will include details on changes that were necessary during the 2020 Census.*

The Census Bureau has been a leader in advancing research on census and survey coverage of young children. The Census Bureau will continue to research and develop new ways to reduce coverage error for young children.

5) The Census Bureau's ability to match records outside of a limited search area--both in the full census and the PES--has improved greatly since 2000. CSAC recommends that as part of its documentation of the 2020 PES the Bureau should clearly identify the universe for each matching operation and indicate how this may have changed since 2010.

Census Bureau Response: *The Census Bureau accepts this recommendation. In the past, the universe for each matching operation has been stated in assessments for each PES operation. The assessments for the PES matching operations will contain descriptions of the universes used for the matching activities. In general, the matching universes for the 2020 PES are similarly defined as for the 2010 Census Coverage Measurement. Although the current plan is to employ a limited search area for dual system estimation, the computer matching systems attempt to match PES housing units and people across the entire nation. During estimation, matches outside the search area are generally considered nonmatches for dual system estimation.*

6) CSAC recommends that the Bureau describe how the new Disclosure Avoidance System will be applied to the (1) estimation and (2) publication of the components of census coverage for the nation, states, large counties, and large places.

Census Bureau Response: *The Census Bureau accepts this recommendation. The methods that will be used for disclosure avoidance of the PES estimates of net coverage and components of coverage are still under consideration. A description of the procedures used for disclosure avoidance will be described in the PES reports.*

7) CSAC members are concerned that the Census Bureau may be placing too much emphasis on "net" numbers in evaluating census coverage. Could this result in overlooking significant inaccuracies in population subgroups? The PES will provide valuable information on gross errors of different types, but how will this information be used? Does it remain relevant in planning the next census? In what ways did the Census Bureau use the results of the 2010 coverage measurement program to aid in planning the 2020 census? Understanding all of the planned and prospective uses of the results of the coverage measurement program would be helpful to CSAC in assessing the success of the PES. CSAC recommends that the Census Bureau prepare a document describing how the Census Bureau plans to use its estimates of correct enumerations, erroneous enumerations by type, whole person enumerations, and omissions.

Census Bureau Response: *The Census Bureau agrees to describe the coverage of the 2020 Census with national measures of net coverage broken down by demographic characteristics as well as components of coverage. We have a long history of producing net coverage of the census at the national level and for many demographic characteristics. The 2010 post-enumeration survey prioritized developing methods to measure components of coverage. Both net coverage and components of coverage are valuable in evaluating the success of the census. Estimates of net coverage for the nation and subgroups (such as age, race, sex, Hispanic origin, and tenure) measure how the census counts compare to independent estimates of the true population size. Estimates of components of coverage are helpful in determining if people were counted in the correct place and without duplication. The PES coverage reports will break down the accuracy, correctness, and coverage of the 2020 Census in a variety of ways.*

The Census Bureau does not agree to prepare a document describing how we will use estimates of components of coverage alone. The 2020 PES reports will be only some of the many sources used in setting the research agenda and priorities for the 2030 Census. However, at this point, it is premature to fully describe how the PES reports and data will be used. For example, in the past decade, the Census Coverage Measurement Survey data were extensively used to further our understanding of the undercount of young children. Yet, this was not a planned use of the 2010 CCM data.

V. Population Estimates Program

The estimates produced by the Population Estimates Program (PEP) are critically important for federal and state funding distribution, local and regional planning, and they serve as the

base for ACS estimates. CSAC applauds the efforts PEP has made to be planful, proactive and innovative in considering how the program may need to adjust to realities of the 2020 Census and related impacts on both the estimates base for the 2020-2030 period and the implementation of the Challenge program.

Such flexibility and adaptability are required because of delays in the Census due to global pandemic and the shift toward a differentially private disclosure avoidance system. The current lack of updated age-specific differentially private (DP) demonstration data shared to date or planned for release in the near future further adds to an already high level of uncertainty PEP faces regarding the accuracy of the 2020 Census data and its fitness for use in generating population estimates, especially estimates for counties and places (geographies with fewer people) by age, sex, race, and Hispanic-origin. The most recently released DP demonstration data that include necessary age breakdowns were in May 2020 and their analysis indicates they are not fit for use as an estimates base at the county level by five-year age group (and further stratification by other population characteristics only exacerbates the error). This raises concerns for PEP, which simply can't know at this point the accuracy of the 2020 Census data they will have to work with.

1) One adaptation PEP is making is the "blended base" for vintage 2021 estimates, and potentially for years beyond. Yet the method used to construct the blended base is not yet fully developed. CSAC is, therefore, interested in learning more about the procedures PEP will use to generate the "blended base." In particular, what external data sources and modeling techniques are being explored? Will the Bureau consider incorporating more administrative records into the "blended base"? Under what conditions will the blended base be used for vintage 2022 estimates and beyond? What measures will PEP use to determine whether the 2020 Census data are fit for use as the estimates base, whether to stay with the blended base, whether to use the differentially private census data as a base or to develop another process of adding noise to PEP estimates, or whether census data will otherwise need to be adjusted?

Census Bureau Response: *The Census Bureau accepts the recommendation to share details about our procedures to generate the blended base. As the method is developed, we plan to host webinars to keep data users, key stakeholders, and the general public informed of our progress and invite their feedback. Once the blended base method is finalized, we seek to provide a comprehensive methodological document which speaks to the questions CSAC has raised above.*

2) As has been done fruitfully to address other issues, CSAC recommends that the Bureau seek input from outside experts and key stakeholders affected by population estimates and publish a report on the blended base development, including how they are making these decisions and results of related evaluation tests.

Census Bureau Response: *The Census Bureau accepts the recommendation. As our blended base method is developed, we will share our progress with key stakeholders, in particular our partners in the Federal-State Cooperative for Population Estimates, and seek their feedback. Other possible forums for seeking input from additional experts and stakeholders include an open-invite webinar. Once the blended base method is finalized, we seek to provide a comprehensive methodological document which speaks to the questions CSAC has raised above.*

DA is a useful tool for evaluating quality of census data, particularly given that it is independent of the decennial census results and is not survey based. CSAC commends PEP's consideration of using DA for adjusting the estimates base. In particular new state- and county-level estimates of young children (age 0-4) in DA open opportunities for adjusting the estimates base as necessary for the undercount of young children. Greater breakdowns of DA results by age and race/ethnicity for young children would be particularly useful for generating the blended base.

Census Bureau Response: *The Census Bureau partially accepts this recommendation. The Demographic Analysis program will not be producing the state and county estimates of young children (age 0-4) until 2022 because of a lag in when we will receive the final birth records from the National Center for Health Statistics. We plan to investigate using these DA estimates to adjust the estimates base, but this would not be implemented until Vintage 2022 or later.*

3) PEP releases will be subject to differentially private (DP) disclosure avoidance. This raises many questions for the program and its procedures. Broadly, how is PEP adjusting to DP? What are the challenges? And how are they being addressed? What tests is PEP doing to explore the potential impact of DP on population estimates at various units and for various breakdowns by age, race, and Hispanic-origin? To what extent is the PEP factored into the overall privacy loss budget (PLB) for the 2020 Census? As the Census Bureau progresses in their decision making, CSAC requests that these questions be answered publicly.

Census Bureau Response: *The Census Bureau accepts the recommendation. PEP staff have been actively exploring the potential impact of DP on population estimates. This includes analyzing the 2010 Demonstration Product and subsequent DAS runs (including the Privacy Protected Microdata File data). The evaluations have focused on the impact of DP on the household and group quarters populations, age distributions, and race and ethnic composition at various levels of geography. Some of the results were shared publicly at the 2019 CNSTAT Workshop. We plan to make details on our research processes and findings available to the public once we have completed our blended base research and identified the timeline for implementing differential privacy in the estimates.*

4) If PEP determines it needs to adjust decennial census data or rely longer term on the blended base, CSAC recommends that the Census Bureau consider carefully how this decision is communicated to other data users and the public, given its implications for all other uses and public trust in the Bureau and its data products. Ultimately, CSAC recognizes that the 2020 Census' fitness for use in PEP will depend on how DP is implemented and the decisions the Data Stewardship Executive Policy (DSEP) committee makes with regards to setting the epsilon and its distribution.

Census Bureau Response: *The Census Bureau accepts the recommendation. The Population Estimates Program will continue to prioritize transparency for and communication with its data users as plans regarding the blended base and transition to differential privacy progress.*

The Challenge program will be particularly impacted by DP. It's unclear what PEP will be able to provide on the derivation sheet to any potential challengers, without disclosing beyond the privacy loss budget. The implementation of DP also raises questions with regards to whether it will be possible to challenge the estimates base.

5) CSAC recommends considering expanding the scope of the Challenge program to allow for challenges to the base. This could be one way to address issues posed by differential privacy, in partnership with data users.

Census Bureau Response: *The Census Bureau does not accept this recommendation. Although our intent is to carefully consider what options might be available for data users to highlight issues posed by differential privacy, any process that could change the data would need to introduce those changes into the data used to produce the estimates base, and not*

afterward. To that extent, we have been and will continue collaborating with other areas of the Census Bureau, such as the Count Question Resolution program, to explore possible ideas.

Given that housing unit data will be held invariant (under DP) down to small geographies, the Housing Unit (HU) method may be a more appropriate estimation technique in some cases. In the decade between the 2000 and 2010 decennial censuses, the Bureau allowed counties to "challenge" their annual census estimate based on the HU method. Following Hurricane Katrina, the rapid repopulation of the city of New Orleans was difficult to measure in the years 2006 through 2009. The City of New Orleans supplied alternative population estimates based on the HU method to the Bureau who then revised the population estimate for New Orleans upward by nearly 50,000 in 2007, and another 25,000 in 2008. Comparing the results of this alternative HU methodology to the 2010 count of New Orleans revealed that the HU method would have resulted in a 6% overestimate of the city's population. However, had the population *not* been adjusted via New Orleans' challenge, the Bureau's Cohort Component method would have resulted in a population estimate 22% *below* the actual 2010 count of New Orleans.

6) CSAC recommends that PEP tests the performance of the HU method for those entities and breakdowns where estimates evaluation (E2) finds larger errors. CSAC also recommends that PEP consider expanding the scope of the Challenge program at the county level to allow for challenges using the HU method.

Census Bureau Response: *The Census Bureau partially accepts the recommendation. As was done as part of our 2010 Estimates Evaluation work, we intend to test the effectiveness of the HU method as part of our 2020 Estimates Evaluation project to see if the findings result in different conclusions than in 2010. Any considerations for revisions to the Challenge Program will also be contingent on those findings.*

7) CSAC recommends that PEP continue to work closely with partners in the FSCPE (Federal-State Cooperative Program for Local Population Estimates) to strategize these practices and that the Bureau consider possibilities for making unprotected data available to a working group of FSCPE partners in order to help with evaluation of DP impacts on population estimates, with development of strategies to mitigate that impact, and for collaboration in implementing the Challenge program.

Census Bureau Response: *The Census Bureau accepts the recommendation. We will continue to work closely with our state partners in the FSCPE and, if feasible, pursue opportunities to engage a group of FSCPE members to assist with evaluating the impact of DP on the estimates and to explore implications for the Challenge Program.*

8) Ultimately, CSAC commends PEP for moving forward to develop a blended base strategy which will buy some time given the delayed 2020 Census data release, evolving decisions about how differential privacy will be applied, and a generally high level of uncertainty about the conditions under which they need to conduct their work. CSAC recommends that the Bureau offer PEP more information, support, and inclusion in decisions about DP application, access to data, or other information that could better inform planning and operations.

Census Bureau Response: *The Census Bureau accepts this recommendation. The Population Estimates Program will have the information, data access, and support necessary for a successful implementation of modernized disclosure avoidance methodology for future vintages of population estimates.*

VI. Assessment of 2020 Census Data Quality Processes

CSAC thanks the JASON group for a quick turn-around study on this important topic. Ensuring that the 2020 Census data quality is within the range of admissibility is extremely important given the numerous uses of data from the Decennial.

CSAC agrees broadly with the recommendations of the JASON study group. As the CSAC has previously recommended, the Bureau should be given the time it needs to ensure complete, accurate, and transparent processing of the data. The current timeline will enable the Bureau to achieve this.

The 2020 Decennial introduced new innovations and faced other challenges during its execution that could contribute to undercounts. Some of these processes can potentially lead to undercounts that are not uniformly spread across the population. For example, the use of IRS data could help reduce undercount for tax filers, but not for the rest of the population. Similarly, the ability to fill out the form online likely improved the self-response rate in the face of the pandemic, but more for those with internet access and savvy.

1) In the face of these biases, CSAC recommends that the Bureau not rely solely on overall quality estimates, but to critically review response rates and type of response by various geographic, demographic, and economic subgroups. Both the internal quality checks that are currently ongoing, and the Post Enumeration Survey would benefit from measuring and reporting quality across various subgroups that could be disparately impacted by the unique circumstances of this Decennial.

Census Bureau Response: *The Census Bureau accepts this recommendation. We plan to publish net coverage error and components of coverage for various demographic groups and states individually. The current methods used for Dual-System Estimation cannot produce unbiased estimates of coverage by economic subgroups because neither the decennial census nor the PES-collected economic data.*

VII. Frames Project

CSAC commends the Census Bureau for taking the leadership on developing the Frames Project. For decades now, statistical agencies around the world have been under pressure to find ways to take advantage of existing administrative records to support the production of official statistics, and the Bureau has come a long way. Nowadays, administrative records are used in virtually every Census Bureau program, in a myriad of different ways. But, until now, there have been few efforts to ensure administrative records are used, interpreted, and processed in a consistent way throughout the different programs. The Frames Program is the pinnacle of this agenda, by envisioning a formal Census Bureau program whose sole purpose is to create common, consistent, and linked frames from existing administrative records for use by all Census Bureau programs.

1) CSAC encourages the Bureau to prepare a technical briefing on how the Frames Program envisions receiving and processing data, and on the efficiency of the link between the MAF and the TIGER database, that can allow the CSAC to offer specific recommendations with respect to these issues.

Census Bureau Response: *The Census Bureau accepts this recommendation. The Frames Program will work with the CSAC and other Census Bureau staff to schedule a technical briefing. With regard to receiving and processing data, the Frames Program anticipates staff responsible for managing the individual frames will continue to use existing data*

collection and ingest processes and/or the Data Ingest and Collection for the Enterprise (DICE). Development of new data collection and ingest processes is not within the scope of the Frames Program; that said, the program will identify requirements and expectations related to data collection and ingest.

2) In order to gauge the completeness of the Frames, particularly of the MAF, the Bureau may consider a spatial completeness analysis or compare the MAF with external frames, such as the U.S. Department of Transportation's National Address Database (NAD).

Census Bureau Response: *The Census Bureau accepts this recommendation. The Geography Division has a project manager whose responsibilities include working with the Department of Transportation on the National Address Database.*

3) CSAC is concerned that forcing consistency among the different frames may inadvertently cause the exclusion of populations that are not well represented in administrative records. The Bureau should consider adding an Equity Officer to the Frames Program team that can oversee and address the technical issues that are surely to arise as the Frames Project moves into a program mode.

Census Bureau Response: *The Census Bureau accepts this recommendation. Frames Program staff agree that development of the Demographic Frame, as well as enhancements to other frames, must utilize a variety of sources, including decennial census and survey response data in addition to administrative records sources. The comment about consistency among the different frames was not intended to suggest exclusion, but that the various frames could be used as checks on completeness. For example, we should expect that a worker listed in the Job Frame will also be found in the Demographic Frame and, if not, trigger the need for an update to the Demographic Frame. Likewise, a person listed in the Demographic Frame along with information collected via a survey that indicated they worked within a specified period (as employment questions on surveys often are worded) could be used as a check on information within the Job Frame. We will work with Census Bureau subject matter experts as well as other experts to ensure the variety of sources used are as inclusive as possible and that we identify methodologies for updating information related to populations that are not well represented in administrative records.*

4) Given that the frames are foundational to so many of the Bureau's products, CSAC encourages the Census Bureau to brief the Interagency Working Group on Equitable Data (established under the Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) on its plans and to solicit use cases from the Working Group that would advance the goals of the executive order (including the one provided on more fine-grained or more current statistics on business owners by race/ethnicity).

Census Bureau Response: *The Census Bureau accepts this recommendation. The Frames Program will reach out to the Interagency Working Group on Equitable Data.*

5) To maintain the public's trust in the Frames Program, and in the Census Bureau's work more generally, CSAC recommends that the Bureau plan on publishing detailed documentation on how the Frames Program will receive, process, and protect data.

Census Bureau Response: *The Census Bureau accepts this recommendation. We agree that detailed documentation regarding the Frames Program's goals, vision, scope, and plans will be valuable in maintaining public trust. Specific to the recommendation, we will clearly document how the Frames Program relates to and interacts with other Census Bureau programs, including data collection and ingest processes, disclosure avoidance methods, and data dissemination processes.*

6) CSAC recommends the Bureau use the 2020 Census Edited File to assign PIKs to persons without a Social Security Number or Individual Taxpayer Identification Number, and who currently lack a PIK.

Census Bureau Response: *The Census Bureau accepts this recommendation. While the specific task of assigning PIKs is outside the scope of the Frames Program, we will work with the relevant staff within the Census Bureau to assure that PIKs are assigned to all individuals in sources used to update and maintain the Demographic Frame, including decennial census sources.*

7) Tax return addresses are used to develop estimates of internal migration and in a variety of other research applications, but taxpayers are not required to provide their residential addresses, and some unknown number provide non-residential addresses instead.

Research use of the tax return addresses would be enhanced if the Census Bureau could use its own address data to code the addresses in its tax data as residential versus non-residential. CSAC recommends that the Bureau explore the feasibility of doing so.

Census Bureau Response: *The Census Bureau accepts this recommendation. We will explore the feasibility of this recommendation as part of our MAF enhancement efforts within the scope of the Frames Program.*

8) As the Census Bureau develops its five-year plan, CSAC also recommends that the Bureau consider including federally-recognized nonprofit organizations as a use case for the Frames Program. These organizations submit annual 990 forms to the IRS that are public by law. (It was not clear from the presentation whether these are already included or identifiable in the current business frame). These groups may list post office boxes as their address on the tax return which limits the ability for accurate analysis of services provided for places in need[2], which could be overcome if there were ways to link some of these entities to actual addresses in the frame.

Census Bureau Response: *The Census Bureau accepts this recommendation. The Frames Program has identified post office boxes as an address type that should be added to the MAF in order to fully support Census Bureau data collection and tabulation programs, both demographic and economic. We currently do not possess data sources or methods to link a P.O. box address to the physical location of the P.O. box "owner" and, as a result, are not able to accurately geocode data associated with P.O. box locations to lower levels of geography. However, we will explore various methods and sources for identifying these linkages.*

9) CSAC is interested in the results of the 2020 Administrative Records Census mentioned in the presentation. CSAC requests a presentation on the 2020 Administrative Records Census at a future meeting.

Census Bureau Response*: The Census Bureau accepts this recommendation. The Frames Program has confirmed willingness on the part of 2020 Administrative Records Census project staff to give a presentation at a future meeting.*

[2] For more information, see https://journals.sagepub.com/doi/10.1177/0899764015573873.

VIII. Introduction of the New Non-Employer Statistics by Demographics

CSAC commends the Bureau for the introduction of this innovative new data product to fill important information gaps on business demographics without respondent burden. As a new series, CSAC encourages investment in a plan for robust ongoing engagement with groups of stakeholders, to ensure an enhancement roadmap delivering maximum utility.

1) CSAC recommends clarifying the charter, scope, and priorities for NES-D. To what extent is the primary goal for NES-D to provide, along with the Annual Business Survey (ABS) for employer data, an approximately equivalent data set to the legacy Survey of Business Owners (SBO) at reduced cost and lag, versus synthesizing a new and enhanced dataset on nonemployer businesses? That guidance would impact stakeholder management and enhancement prioritization.

   CSAC expects that, especially in light of the COVID-19 pandemic's effects on businesses and business ownership, there will be significant stakeholder interest in reducing lag in this series.

   Regarding the methodology for determining nonemployer businesses: tax filings of Schedule C, Profit or Loss from Business (Sole Proprietorship) are sometimes used as a source of data on the number of sole proprietorships, but Schedule C is also required for everyone receiving even modest sums in non-employee compensation. It would greatly enhance our understanding of the Schedule C universe if the Census Bureau could separate true business owners from non-business owners who file such forms (for example, to pay the Social Security tax on their non-employee earnings).

   Census Bureau Response: *Thank you for these recommendations. Based on stakeholders' input, and as a first step, the current priority is to provide* ***total*** *business-owner demographics annually, as timely as possible, and with as much industry and geographic granularity as possible.*

   As a longer-term goal, NES-D plans to provide enhancements on issues/characteristics that research has shown to be more relevant for nonemployers (vs. employer) businesses, such as household characteristics and issues related to the gig economy.

Currently the shortest lag NES-D can provide is 2 years. At the same time, we are currently exploring ways to link demographic characteristics to nonemployers in a more timely manner using SS-4 (EIN application) data and demographic administrative records data. An item in form SS-4 contains the SSN of the responsible party applying for the EIN.

Census Bureau does not currently have this item in-house, but we are engaged in talks with the IRS for its delivery.

NES-D uses the nonemployer universe identified by Census' Nonemployer Statistics or NES (https://www.census.gov/programs-surveys/nonemployer-statistics/technical-documentation/methodology.html): NES universe of nonemployer firms is created annually in conjunction with identifying the Census Bureau`s employer business universe. The potential nonemployer universe is edited and reviewed to detect and remove firms that are not true nonemployers. Among other things, nonemployer businesses with less than $1,000 in receipts are excluded in all industries except Construction (where the cutoff is $1). The small receipts of these firms indicate that they may represent hobbies as opposed to normal business activities.

In addition, we are engaged in an ongoing effort to obtain more detail data from IRS tax forms, such as 1099-MISC, 1099-NE, 1099-K and 1040 with the goal of better differentiating nonemployers whose main source of income is their self-employment from individuals partially engaged in self-employment and/or the gig economy. Self-employment is a slippery concept. Obtaining more granular data will allow us to potentially develop a taxonomy that could help us better understand the self-employed world.

2) CSAC recommends that the Census Bureau explore whether the Schedule C data the Bureau receives from the IRS would allow such differentiation and, if so, develop plans to report statistics that differentiate between business and non-business non-employers.

Census Bureau Response: *See response above.*

IX. Business Formation Statistics

CSAC appreciates the work that has been done by the Census Bureau to launch the Business Formation Statistics (BFS) product on an experimental basis, in collaboration with economists in the Federal Reserve system and academia. BFS has the potential to be an

informative economic indicator, and CSAC agrees with the conclusion that more frequent and timelier BFS data will allow for better monitoring of entrepreneurial activity in the United States.

1) In prioritizing resources for data collection, CSAC notes that there is value in having a data collection system in place that can be implemented weekly when there is a social or economic crisis comparable to the COVID-19 pandemic, such as natural disasters, and recommends that this emergency capability be maintained.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. We also have the weekly Small Business Pulse Survey that measures the effect of changing business conditions during the COVID-19 pandemic on our nation's small businesses. A new preliminary research proposal is also exploring the feasibility of measuring the effects of disasters on new business formation based on high-frequency satellite data on disaster location and severity (in cooperation with NASA).*

2) Outside of such events, it is not clear, from the presentation or from the nature of economic policymaking, that the drivers of new business formation vary importantly at a weekly frequency. CSAC recommends continued study of the time-series properties of the BFS indicators to ascertain the incremental value of weekly data relative to monthly data under less extreme circumstances.

In contrast to the time dimension, the spatial dimension of the BFS could benefit from more granularity. Part of the long-term polarization of economic experiences in the United States is geographic -- metropolitan statistical areas (MSAs) are pulling away from less urban areas. Having data at a geography finer than state, even down to the county level (so that they can be aggregated to year-specific MSAs), at a frequency higher than annual, like quarterly or even monthly, may provide an important indicator of the business cycle at a more local level.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The team will continue to assess the demand for the weekly data product. The team will also explore the feasibility of publishing at more granular geographies. Ongoing research is also examining the patterns on business applications and formations at finer geographies, such as census tracts and blocks, with a goal of understanding the connection between business formation and local conditions.*

3) CSAC recommends an assessment of the possibility of more frequent data at finer geographies.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The team will explore the feasibility (especially as it relates to disclosure concerns) of publishing more timely data at more granular geographies.*

X. Construction Modernization – Re-engineering Initiative

CSAC would like to thank Stephanie Lee Studds and her team for such impressive work. The use of innovative techniques, such as the change detection from satellite images, allows the team to modernize the collection and analysis of construction data.

1) CSAC recommends that the Bureau communicate and get feedback on the results of its construction modernization efforts via professional conferences. The most immediate opportunity is a conference hosted by the American Society for Photogrammetry and Remote Sensing (ASPRS). This conference is a virtual conference from March 29 – April 2, 2021. http://conferences.asprs.org/asprs-2021/sessions/

   In review of the agenda for the conference, there are over 30 sessions related to image classification, change detection and Machine Learning Techniques. These presentations and technical sessions are relevant to the analysis being performed by the Census Bureau's construction re-engineering team. This conference is hosted by ASPRS annually, so if the opportunity to participate this year is missed, there will be future opportunities.

   Census Bureau Response: *The Construction Re-Engineering Team appreciates the feedback and did attend the conference.*

2) CSAC recognizes the great value of the change detection products for new construction. CSAC suggests that identification of existing structures would generate a beneficial dataset for cross reference and validation of address canvassing as well as to support other national government mapping initiatives like the FCC's broadband mapping program. By using information on existing structures, it would be possible to distinguish between entirely new construction (where no construction was previously) and construction that is in addition to or in the location of existing structures. These distinctions would be important for downstream usages and cross-validating with other commercial and public use data (e.g., Zillow).

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The hunting mode can classify existing construction via the completions stage detections, and the team will continue to review, analyze, and onboard other datasets to assist in the validation of the classifications. We will look specifically at the FCC broadband mapping program. This research will be extended for downstream usages and cross-validating with other commercial and public use data.*

3) CSAC recommends that the Bureau investigate the use of Lidar data to add a three-dimensional component to the analysis. The USGS' 3DEP (3-Dimensional Elevation Program) would be a good source for Lidar data. 3DEP is a national program with planned cycles of updates. The potential integration of 3D components (either from datasets like Lidar or from photogrammetric stereo models from the imagery) should be investigated.

   Another potential data source is Commercial Aerial Imagery from programs such as Hexagon's Image Content Program. (See https://hxgncontent.com/coverage-map) This imagery is at a much higher resolution than satellite imagery available, and could enhance detection techniques for additional features (pools, other structures, construction additions, etc.)

   Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The Construction Re-engineering Team has worked with the current data vendors on 3-dimensional imagery to expand their coverage and frequency of updates. We plan now to prototype a 3D construction classification model very soon and do comparisons to the 2-dimensional high-resolution images in our current models. We will also investigate techniques discussed during the ASPRS Conference on Lidar Semantic Segmentation for Building Detection. The team is also investigating Hexagon's Image Content. We plan to present our work to the CSAC Working Group in June during our update session.*

4) One technique that is referenced in recent articles for change detection is the integration of 'street level' imagery in combination with satellite or aerial imagery. The ASPRS conference referenced includes presentations on this integration. This technique has been used for damage assessment after events like fires, hurricanes, etc. CSAC would appreciate an update in the future on how the model performs in areas hit by disaster, both in areas being rebuilt (under the new construction model) as well as places that are not rebuilt.

   The state-of-the-art in image classification models is fast evolving and models such as ResNets are close to the state-of-the-art today. This being an active research area, the Bureau could evaluate more recent neural network architectures. Some of the cloud

providers in this space also offer solutions which will stay relatively up-to-date as the technology evolves, and the Bureau may evaluate those options. Additionally, the neural networks being used here are optimized for specialized hardware such as GPUs. Cloud providers such as AWS, Google and Microsoft offer an easy way to evaluate various hardware configurations for these applications, which may allow significantly reducing the time required to process a set of images and get the Bureau to real-time processing.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The Construction Re-engineering Team has had early discussions on the inclusion and usage of street imagery. These conversations and research will continue for inclusion in the program. The Construction Re-Engineering has prototyped a solution to quantify damaged areas by disasters (wildfires and hurricanes) for The Opportunity Project. This tracked and provided insight on the effectiveness of relief funds for the location. The intent is to modify the business logic and include this solution with Construction Re-engineering. We will investigate the cloud and GPUs and provide additional information during the June session with the Working Group.*

XI. New Modeled, Monthly State-Level Retail Sales Product

CSAC appreciates the work done by the Census Bureau and would like to thank the team involved for the effort to release these experimental data on State-Level Retail Sales. These data fill an important hole in data coverage at a subnational geography through the use of a composite index. CSAC has concerns about understanding the errors associated with the composite index.

1) CSAC recommends that the Bureau further investigate the use of small area estimation methods and consider revisions to the MRTS design that would allow for efficient small domain estimation within states, months, and retail sub-sectors. Designs that are finely stratified and minimize clustering are most amenable to small domain estimation, as they ensure presence of sample in all domains. Standard small area estimation would offer the advantages of data-driven composite weights that are optimal under the small area model, along with proper uncertainty quantification with estimated mean squared errors. By contrast, the current indirect estimation methodology involves a composite of two indirect estimators, each with unknown biases, composite weights that are not optimal, and standard errors that do not fully account for the uncertainty in the methodology.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation and will research including small area estimation as part of the methodology.*

2) CSAC agrees with the priorities of the team in trying to secure additional sources of third party data to broaden coverage particularly with regards to small and medium sized businesses and suggests partnering with point-of-sale (PoS) providers that have coverage of that segment such as Square. CSAC recommends further exploration of how prior sample frames from the national Monthly Retail Trade report could be used to extend the history of these series given the importance of seasonal trends in this data, but appreciate the difficulty of recovering those state level seasonal trends from the hybrid estimator alone.

Census Bureau Response: *The Census Bureau appreciates and accepts this recommendation. The team will seek out third-party data sources that provide coverage of small and medium sized firms. The team will also explore the feasibility of extending the time series back in history.*

XII. Public Comments

1) CSAC recommends that the Bureau respond in writing to the public comments submitted by Adeline Wilcox and Debbie Stein, and for transparency, to post your responses on the CSAC web page of the Bureau's website immediately below where Ms. Wilcox's and Ms. Stein's comments will be posted.

Census Bureau Response: *Thank you for your recommendation.*

XIII. CSAC Logistics

1) To assist in orienting new members, CSAC recommends that the Bureau regularly offer an online "Census 101" training whenever new members are added to the committee. This training could cover Census Demographic Programs, Census Economic Programs, American Community Survey, and Decennial Census Programs.

Census Bureau Response: *Thank you for your recommendation. The Census Bureau currently conducts New Member Orientation to provide new CSAC committee members*

with the precise information they need on the operation of the U.S. Census Bureau and their roles and responsibilities as a CSAC committee member. The orientation includes the following topics: 1) Standard Operating Procedures, 2) Federal Advisory Committee Act guidelines, 3) Ethics Rules for Special Government Employees, 4) Finding Census Data, 5) Demographic Programs, 6) Economic Programs, 7) American Community Survey, and 8) 2020 Census Programs.

2) CSAC also highly recommends that the Bureau provide a list of acronyms and definitions to assist new CSAC members to understand presentations and reports.

Census Bureau Response: *The Census Bureau accepts this recommendation.*

The continuing members of CSAC want to thank Allison Plyer for her tremendous leadership for three years and to recognize the invaluable service for six years of Dr. Plyer and the five other members (Kathy Pettit, Juan Pablo Hourcade, Jeff Lower, Krishna Rao, Andrew Samwick) now rotating off.

3) CSAC recommends that new members appointed to the CSAC increase gender, racial, ethnic, and age diversity as well as to strive for a balance of experts from the non-profit, private and academic sectors and of experts with connections to diverse groups of Census data users.

Census Bureau Response: *The Census Bureau accepts this recommendation. As indicated in the Census Scientific Advisory Committee charter, the Census Bureau is committed to having a balanced representation among its members, considering such factors as geography, age, sex, race, ethnicity, scientific expertise, community involvement, and knowledge of census programs and/or activities. Individuals will be selected based on their expertise in or representation of specific areas as needed by the Census Bureau and specified in the Federal Register Notice call for nominations.*