

Perspective on the Report of the Technical Panel on Labor Supply to Inform the Trustees' Projections
Convened by the Social Security Advisory Board

By Office of the Chief Actuary, Social Security Administration

We in the Office of the Chief Actuary (OCACT) have carefully reviewed the Technical Panel's written report and are grateful for many valuable observations and recommendations. However, due to the nature of the panel's recommendations and the limited opportunity we had to interact with the panel members over its 13-month tenure, we have taken the unusual step of providing some clarifications and responses in this perspective. The two key points that deserve clarification are (1) our model is highly developed and well explains the historical trends seen prior to the recession that started in 2007, and (2) we believe it is premature to assume that labor force participation will be permanently and substantially reduced for the indefinite future as a result of the recent recession. Before elaborating on these two key points and the balance of the panel recommendations, we provide an overview of our work developing present-law baseline projections for Social Security, including the labor force model, and our desire for the contributions of Technical Panels.

Overview

OCACT develops methods and recommends assumptions for the annual Social Security Trustees Report, encompassing all demographic and economic parameters that have effects on the income and cost of the Social Security program. The Chief Actuary also signs a Statement of Actuarial Opinion for each annual Trustees Report, as required by law, attesting to the reasonableness of the assumptions and methods used. There are numerous layers of oversight for the development of the Trustees Report, including extensive work with the staffs of the Trustees who sign the reports. We are also subject to full-scope audit of the projections included in the report, by GAO, the Social Security Administration's (SSA) Office of the Inspector General, and the independent accounting firm KPMG. This audit is required as part of the audit of SSA's Annual Financial Report and the Consolidated Financial Statement of the Federal Government.

An additional source of advice for this process is the Social Security Advisory Board (SSAB), which has periodically appointed Technical Panels, following a tradition from the quadrennial Advisory Councils. Beginning in 1999, the SSAB has selected panels of actuaries, demographers, and economists to assess the assumptions and methods used by OCACT in developing the projections for the Trustees Report. The report being presented on June 30, 2017 by the current panel focuses only on OCACT's labor force participation model.

OCACT has consistently requested significant interaction with each panel, so that our team of actuaries, economists and demographers has the opportunity to benefit from the expertise and insights provided by the panel members. OCACT has always emphasized that hearing a diversity of views—and, importantly, the rationale for the views and recommendations from the panelists—is critical to the value of the panel's report.

OACT Responses to Specific Panel Recommendations

Panel Recommendation 1. The Office of the Actuary should put additional effort into systematically exploring the capability of its labor force projection module to explain pre-Recession historical trends, and should explicitly consider which, if any, of the forces generating recent historical trends are likely not to continue into the future.

OACT Response 1. OACT systematically developed its LFPR model using several key factors to explain past trends and to provide a basis for projection. The panel mentions specifically marriage, disability, and education. Marriage and disability are integral components of the OACT model and play an important role in explaining the pre-recession labor force participation rate trends. The 2015 Technical Panel specifically mentioned education as an additional factor for consideration and we are pursuing that, consistent with the current panel's further recommendation.

We have periodically reexamined the capability of the model to explain past trends, and did so in 2014. At that time, we developed the table below, which illustrates the main factors in our model that were contributing to lower labor force participation rates for males at ages 25 to 54. Notably, this is the same group of "prime-age males" that is a particular focus of the current panel. While our model is actually fitted to historical experience from 1994 to 2007, we completed the analysis shown below for the longer period from 1973 to 2007.

Males	Change in Male LFPRs from 1973 to 2007 (34 years)						
Age	Actual Change	OACT Model Estimated Change					Percent
		Total	Components				'Explained' by Model
			Marital Status	Disability	Business Cycle	CPS 1994 Redesign	(c / b) *100
		sum(d:g)					(h)
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
25 to 29	-0.026	-0.036	-0.028	-0.005	-0.003		140%
30 to 34	-0.038	-0.033	-0.023	-0.007	-0.003		87%
35 to 39	-0.037	-0.026	-0.016	-0.010	-0.001		71%
40 to 44	-0.043	-0.037	-0.021	-0.014	-0.002		87%
45 to 49	-0.048	-0.043	-0.022	-0.019	-0.002		89%
50 to 54	-0.054	-0.054	-0.031	-0.021	-0.001		101%
25 to 54	-0.041	-0.040	-0.019	-0.015	-0.002	-0.004	97%

This table illustrates the change in LFPR from 1973 to 2007 explained by the OACT model, with a focus on the most important explanatory variables for male participation rates. The largest effects are for changes in marital status and disability prevalence. Together these two variables explain well over one-half of the actual change for each age group and for the 25-54 age group as a whole. We performed the same analysis for various shorter time periods between 1973 and 2007 for males at ages 25-54 to assess

whether the results were sensitive to the time period selected, and the results are similar to those shown above.

The panel presented a similar comparison over the shorter period 2000-07, but showed more age groups. Figure 6 in the panel's report shows that the OCACT model came very close to matching actual experience, slightly underestimating the actual changes at most ages. This figure shows only slight deviations from the actual trend for males at ages 25-54.

We agree with the panel that the deviations for men at ages 16-17, 18-19, and 20-24 are larger. We are working to improve the model fit at these ages. However, our examination of the literature suggests that a coherent explanation for the declines at these ages is elusive. We note that the LFPRs for these ages are very low, and a linear extension of the downward trend throughout our projection period is not plausible. In addition, these age groups tend to have relatively low annual earnings levels because of a relatively higher rate of part-time or part-year employment and lower hourly wage rates, so LFPR deviations at these ages have a relatively small impact on the financial status of the trust funds.

Panel Recommendation 2. The OCACT model should allow for differential trends in labor force participation by level of education and should assume that the forces underlying those trends will continue at least over the medium term. Further, consistent with Recommendation 1, the OCACT model should be modified to capture pre-Recession trends by education.

OCACT Response 2. The panel report states "incorporating differential trends in LFPR by education is our primary recommendation...". Figure 7 in the panel report shows differential trends in LFPR for males 25-54 by educational attainment group from 1964 to 2014. In discussing these differential trends with the panel and with others, we have noted specifically that much of the variation in change by category of attained educational status appears to result from the changing composition of the individuals in these categories, as the population has moved to a distribution with higher educational attainment. To address this situation, some researchers have considered changes in trend by quintiles or deciles of educational attainment rather than by categories with changing proportions of the total population. This being the case, producing separate equations by levels of educational attainment might not be the most appropriate way to incorporate the effect of educational attainment on LFPRs. We think it would be better to re-examine the method we use to incorporate educational attainment as an explanatory factor within our current set of equations and more fully include changes in average attainment across ages and time.

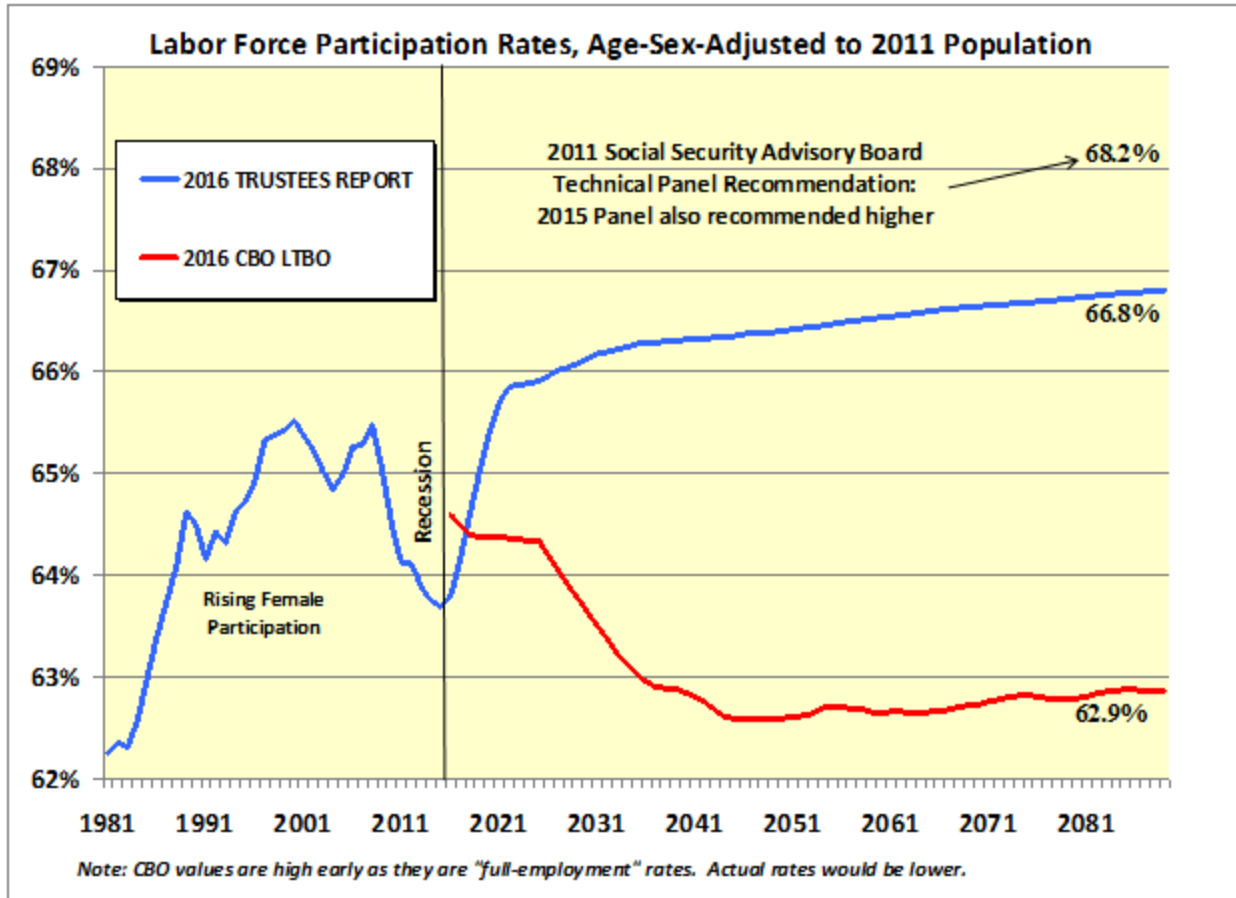
The panel also mentions changes in health for males, as studied by Case and Deaton. These changes have had specific effects on mortality for males, but it is not apparent that the health considerations will persist or even get worse. Implications for LFPR are less clear, especially as changing disability prevalence rates are closely related to health status. In general, demographers have believed that age-specific health status will tend to improve over time and will lower death rates. Another implication of better health status should be a greater ability to work.

Panel Recommendation 3. The OCACT model should greatly reduce the magnitude of its projected recovery from the Recession and should instead project that relatively little recovery will occur until the evidence suggests otherwise. The model should also construct the recovery to match the model's assumption of long-term values based on pre-Recession projected trends.

OCACT Response 3. We fundamentally disagree with this recommendation. We have long recognized that changes in trend for short time periods may appear to be permanent effects, but most often are not. For example, rapid mortality improvement from 2000 to 2009 led many to assume that death rates would consistently drop rapidly indefinitely into the future. OCACT instead maintained a slower ultimate rate of decline than many were expecting, assuming that there would be periods of slow improvement as well as fast improvement. Actual mortality experience since 2009 has proven this to be a good approach. Rather than assuming there will be no (further) recovery in LFPR from the recent recession until it occurs, we believe that it is more prudent to assume that there will be recovery consistent with past economic cycles, unless and until the current economic cycle completes with LFPR still well below historical levels.

We have based our projected recovery in LFPR on the historical relationship between the unemployment rate gap and the labor force participation rate for each age-sex group. The panel appears to be recommending that we disregard the historical relationship and assume no recovery, because the labor force participation rate has not yet fully responded to the current low unemployment rate. We note that the labor force participation rate was slower to respond to the rapid rise in the unemployment rate that occurred at the beginning of the recession than our model projected. However, the labor force did eventually respond to the rise in the unemployment rate. We believe that the severity of the recession, and subsequent slow recovery, has likely resulted in a slower response to the unemployment rate than in the past. Like others, we believe that there is more slack in the labor market than the current unemployment rate indicates, and that as the labor market tightens and wages begin to increase, labor force participation rates will further recover. The panel appears to agree on this point by mentioning the possible use of employment rates (defined as the number employed divided by the population) rather than unemployment rates (defined as the number unemployed divided by the labor force) in evaluating slack in the labor market. This is another concept we are exploring.

In a House Ways and Means Subcommittee hearing on September 21, 2016, we presented the following figure. This figure illustrates the level of overall age-sex-adjusted LFPR since 1981 leading up to the recession starting in 2007. The figure also notes that both the 2011 and 2015 Technical Panels recommended higher ultimate levels. Since the time of the hearing, CBO has modified their LFPR projections to no longer show such a dramatic decline. In fact, CBO's projections are now much closer to those used for the 2016 Trustees Report, as shown in the panel's report. OCACT's projection of ultimately higher age-sex-adjusted overall LFPR has been based on four main assumptions: (1) the drop in LFPR in the recent recession at younger ages will not be permanent for those cohorts, or for future generations of younger individuals; (2) the overall higher levels of LFPR and employment seen in recent decades because of the rise in LFPR for women, greatly narrowing the gap with men, will persist; (3) declines in recent decades, especially for males at ages 25-54, are largely explained by changes in marital status and disability prevalence, which are expected to be essentially stable in the future; and (4) increasing longevity for individuals over age 55 will continue to result in generally better health and ability to continue working at older ages, and in their need to work longer to plan for a more extended period of retirement.



We acknowledge that there remains considerable uncertainty as to the ultimate degree of recovery in male ages 25 to 54 labor force participation rates (and also for other age-sex groups). We understand the panel’s position in considering that there may be no further recovery in LFPs. In regard to this possibility that employment will be permanently reduced as a result of the recession, we would have preferred for the panel to state the basis for their belief. It is not clear whether the panel believes there is now a permanent structural shift in the overall economy, such that the demand for labor will be substantially and permanently reduced after the recent recession. If the panel believes such a shift has occurred, we would like to understand their rationale.

Further, assuming a permanent and substantial drop in LFP and employment following the recession may be questionable because: (1) the working age population is shrinking relative to the total population, so demand for labor at working ages could ultimately go up; and (2) while the level of real wage and worker productivity can reasonably be reduced somewhat for all future years, this seems less likely for the LFP. As long as employment prior to retirement age is necessary for workers to have income and survive, it seems logical that the population age 25-54 and older will continue to find employment, even if not the most desirable employment. If the panel is endorsing a permanent shift to lower levels of employment, it should indicate its rationale.

Panel Recommendation 4. The OCACT model should incorporate data from Recession years in estimating its effect of the business cycle on the labor force participation rate.

OCACT Response 4. In the past, we have delayed re-estimating our model with new data until the completion of the latest business cycle. Therefore, we believe it is premature to attempt to incorporate the incomplete cycle that began in late 2007. Moreover, because the nature of the economic responses in this cycle are so far substantially different than in previous business cycles, it is not clear that incorporating this cycle in the normal fashion would be appropriate. Again, to the degree the panel believes that fundamental changes have occurred, they should be clear on the structural changes they are assuming in the labor market.

Panel Recommendation 5. The OCACT model should modify its projection of completed educational distributions by using educational levels experienced by those younger than 35 and using the data from more recent cohorts to make projections.

OCACT Response 5. As we have noted above, we agree with the 2015 panel and the current panel that more development is warranted in this area.

Panel Recommendation 6. Some attempts to validate the 40 percent life expectancy add factor should be conducted, either by comparison to regression-based estimates or by applying the add factor to historical cohorts to assess its plausibility, or both.

OCACT Response 6. We agree with this recommendation.

Panel Recommendation 7. Incorporation into the OCACT model of an effect of DI application on LFPRs above and beyond benefit receipt itself should improve the accuracy of its LFPR projections.

OCACT Response 7. We interpret this recommendation to suggest that LFPR at a given age is affected not only by the stock of individuals currently receiving disabled worker benefits (that is, the prevalence rate that is already included in the model), but in addition, the stock of individuals who have applied for but have been denied benefits. We have examined the literature on the effect of DI applications on labor market outcomes, including the most recent work by Autor, Maestas, Mullen, and Strand (2017). We agree that the stock of individuals who have been denied for benefits exhibits diminished LFPR, as is clearly the case for those allowed for and in receipt of benefits. However, as indicated by Autor et al, the effect of a denial on subsequent labor market outcomes is much smaller than the effect of a DI award and is less persistent.

Prior to the recession, the stock of denied individuals had been increasing roughly in unison with the stock of individuals receiving benefits, because overall allowance and denial rates have been generally consistent with only business cycle variation. Thus, adding a further effect for the increasing stock of denied applicants could help further explain the decline in LFPR for prime age males, and would likely further improve the fit of the model for males, especially at ages 30-49. This clearly is something worth exploring. We note, however, that with maturation of the DI program and assumed future stability of disabled worker prevalence rates, the same stability would result for the stock of denied applicants. As a result, while this addition to the model would likely improve the historical fit, it would have little if any effect on projected LFPR for the future.

Panel Recommendation 8. The OCACT should investigate the usefulness of data on earnings reported to the Social Security Administration to improve the accuracy of its employment data.

OCACT Response 8. The panel usefully observes that CPS data may have issues. It is important to note, however, that our fundamental employment parameter is workers in OASDI covered employment who actually contribute payroll taxes to the program and earn benefits on that basis. We do utilize actual 100-percent IRS and SSA data to estimate covered employment. Trends in the relationship among labor force, national employment, and OASDI covered employment are as important as trends in LFPR itself. Any historical problem with the national employment trend would be evident in the changing relationship between the covered worker counts and the national employment estimates. We agree that this is an area worthy of further study.