Executive Summary

The labor force module constructed by the Office of the Actuary (OCACT) is used for projections of labor force participation rates over a 75-year period into the future. Those projections, coupled with those from the rest of the Actuary's model, inform projected revenues and costs for the OASDI system and therefore projected program surpluses or shortfalls. The labor force projections in the module are an important part of the projection of Trust Fund balances.

The current labor force module in the OCACT model has been developed over many years, with careful consideration to the incorporation of major determinants of labor force participation rates (LFPRs). The module is extremely detailed, projecting LFPRs for 153 different demographic groups, with different variables affecting the LFPRs of each. The structure of the model has been thoughtfully constructed and the projection equations are conventional in form, consisting of a linear weighted sum of the different factors, common to linear statistical models. A great deal of effort has gone into the weights and coefficients in the model. The projection equations used for each group, when aggregated using projected demographic proportions for each of the 153 groups, yields a projection of the aggregate LFPR over the next 75 years.

The Panel has studied the labor force module at length and has no recommendations for changing the overall structure of the module. However, the Panel does believe that a number of improvements in the assumptions and methods in the module are possible, and that these could improve the accuracy of the LFPR projections.

One area where improvements can be made is through a study of the causes of LFPR trends prior to the Great Recession (henceforth, the "Recession"), the forces which gave rise to those trends, and whether they will continue to operate in the future. There are strong trends in the LFPRs of many demographic groups prior to the Recession, especially those for prime-age men as well as for young men and women, and the current OCACT model does not well capture those trends or contain variables representing or proxying their probable causes. Adding variables to the model which capture those trends, many of which are quite likely to continue into the future, would improve the LFPR projections. The Panel's first recommendation is therefore:

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.**

A second, related area where improvements could be made is to conduct separate LFPR projections for different educational groups. This issue is connected to the first one, for a leading theory of the cause of the decline in LFPRs for many demographic groups prior to the Recession is that labor demand for less-skilled workers has been falling over the long term, and that this contributed to a decline in many LFPRs. The historical evidence shows that LFPR trends have been quite different by educational level. The current OCACT model incorporates education effects on LFPRs in only a very limited way. The second recommendation of the Panel is therefore:

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.**

Other forces which past research has suggested may have contributed to pre-Recession LFPR trends relate to rising rates of poor health, disability in addition to SSDI receipt, and rising incarceration rates. Incorporating these variables is also likely to improve labor force projections.

A third area of improvement concerns the treatment of the recovery of LFPRs from the Recession. The current OCACT model assumes that a recovery will take place which will take LFPRs back to levels close to, and only slightly below, the 2007 levels attained just prior to the Recession. The Panel believes that the data do not support such a strong recovery. LFPRs even 7 years after the trough of the Recession are still far below their 2007 levels and have only been rising by very modest amounts. The failure of LFPRs to rise more than they have is, further, consistent with a continuation of pre-Recession downward trends into the post-Recession period, for such a continuation implies that LFPRs will not return to their 2007 levels but will only return to lower levels consistent with a long term downward trend. This leads the Panel to the following recommendation:

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.**

Apart from the issue of what the LFPR will return to after its recovery from the Recession, an additional issue is that a projection must be made for what the LFPR will be over the recovery period itself. The magnitude of that effect depends upon how much a given change in the unemployment rate affects LFPRs. The current OCACT model assumes that the relationship of the LFPR to the unemployment rate is that which the experience of recessions prior to 2007 suggests. The panel believes that the evidence from the Recession should be incorporated into the OCACT's estimate of the business cycle effect and, more generally, that the experience of the Recession should be fully incorporated into the model:

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.**

In addition to these four recommendations, the Panel believes that several other aspects of the model could be investigated which may also lead to improvements in its labor force projections. For example, the Panel found that the method of projecting educational composition over the 75-year projection period is failing to incorporate recent trends in high school completion and therefore trends in completed years of education. The Panel also concluded that some validation of the assumptions regarding the effect of life expectancy on LFPRs should be conducted. Another area of improvement the Panel believes worth investigation is the incorporation of applications to the DI program as well as benefit receipt. Finally, the Panel concludes that an investigation of the usefulness of SSA data on earnings might be investigated to improve the accuracy of its labor force data and therefore its projections. The current projections rely mainly on household survey responses of participation and employment, while SSA earnings records contain more reliable individual-and group-level indicators of employment status during a calendar year.

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.**

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.**

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.**

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.**

The Panel also compared the LFPR projections of two other models, that of the Congressional Budget Office (CBO) and that of the Federal Reserve Board, both of which project lower future LFPRs than does the OCACT model. The Panel spent greater effort on the CBO model because it projects LFPRs 75 years into the future whereas the Federal Reserve only projects 10 years out. Revisions in the CBO projections made during the Panel's deliberations increased their projected LFPRs and have greatly narrowed their differences with OCACT projections. Because of incomplete documentation of the CBO model and because the CBO did not provide sufficient information to the Panel, the Panel is unable to determine the reasons for the remaining difference. The Federal Reserve Board projects much lower LFPRs than does the OCACT or the CBO. The differences seem to be partly driven by the treatment of the Recession years and how the drop in LFPR in those years is explained. The Panel suggests that the staff of the OCACT investigate the other recommendations made in this Report before considering modifying their model to align with the Federal Reserve Board model.