Labor Market Dysfunctions: Trends, Cycles, and Policy Responses
Work in Progress

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Chairman, Council of Economic Advisers

EC 2415: Seminar on Macroeconomic Policy
Harvard University
March 29, 2016
Seven Talks I Won’t Be Giving Today

1. Why has the United States recovered sooner and more strongly than other advanced economies?

2. Why have growth rates across the advanced economies, and especially across emerging economies, come in below expectations?

3. Why did productivity growth slow starting around 2004 and what is the outlook for the future?

4. Why has the real interest rate continued to fall across advanced economies? And how does this relate to the macroeconomic consequences of increased debt?

5. Why has the relationship between inflation and unemployment been so weak, with both missing disinflation in the recession and missing inflation in the recovery?

6. What is the role of the U.S. increase in oil/gas production and the U.S. decrease in oil consumption in price changes?

7. Why have U.S. health costs slowed so much?
Outline of Today’s Talk

1. The Labor Market Recovery
2. Long-Term Unemployment
3. Part-Time for Economic Reasons
4. Labor Force Participation
5. Summary of Results, a Speculation, and Some (Brief) Policy Implications
Outline of Today’s Talk

1. The Labor Market Recovery
2. Long-Term Unemployment
3. Part-Time for Economic Reasons
4. Labor Force Participation
5. Summary of Results, a Speculation, and Some (Brief) Policy Implications
The Unemployment Rate Has Consistently Fallen Below Expectations

Unemployment Rate and Consensus Forecasts

Percent of Labor Force

Note: Annual forecasts are current as of March of the stated year. Shading denotes recession. Source: Blue Chip Economic Indicators; Bureau of Labor Statistics, Current Population Survey.
Recovery in the Labor Market is Broad-Based Across Demographic Groups...

Tracking the Recovery Across Labor Market Indicators

All Data as of February 2016

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percent Change to Great Recession Peak</th>
<th>Percent Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Unemployment Rate (UR)</td>
<td>90</td>
<td>108</td>
</tr>
<tr>
<td>Male UR</td>
<td>106</td>
<td>108</td>
</tr>
<tr>
<td>Female UR</td>
<td>74</td>
<td>107</td>
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<tr>
<td>White UR</td>
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<td>107</td>
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<tr>
<td>Black UR</td>
<td>72</td>
<td>114</td>
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<tr>
<td>Hispanic UR</td>
<td>99</td>
<td>117</td>
</tr>
<tr>
<td>Asian UR</td>
<td>89</td>
<td>114</td>
</tr>
<tr>
<td>Less than HS UR</td>
<td>100</td>
<td>107</td>
</tr>
<tr>
<td>HS Grads UR</td>
<td>127</td>
<td>93</td>
</tr>
<tr>
<td>Some College UR</td>
<td>117</td>
<td>98</td>
</tr>
<tr>
<td>College Grads UR</td>
<td>99</td>
<td>101</td>
</tr>
</tbody>
</table>

Note: Unemployment rates by education are for persons age 25+. All other rates for persons age 16+ unless noted.
...But Some Elevation Remains in Broader Measures of Slack and in Long-Term Unemployment

### Tracking the Recovery Across Labor Market Indicators

All Data as of February 2016

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Remaining Elevation as of February 2016</th>
<th>Percent Increase to Great Recession Peak</th>
<th>Percent Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Unemployment Rate (UR)</td>
<td>-7</td>
<td>90</td>
<td>108</td>
</tr>
<tr>
<td>U-4 (U-3 + Discouraged)</td>
<td>-4</td>
<td>92</td>
<td>105</td>
</tr>
<tr>
<td>U-5 (U-4 + Other Marginally Attached)</td>
<td>-3</td>
<td>84</td>
<td>104</td>
</tr>
<tr>
<td>&quot;U-5.5&quot; (U-5 + (½*Part-Time for Economic Reasons))</td>
<td>2</td>
<td>86</td>
<td>97</td>
</tr>
<tr>
<td>U-6 (U-5 + Part-Time for Economic Reasons)</td>
<td>6</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>Discouraged Workers (NSA, % of LF)</td>
<td>36</td>
<td>209</td>
<td>83</td>
</tr>
<tr>
<td>Marginally Attached (NSA, % of LF)</td>
<td>13</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>Part Time for Economic Reasons (% of LF)</td>
<td>27</td>
<td>103</td>
<td>73</td>
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<tr>
<td>Short-Term UR</td>
<td>-16</td>
<td>64</td>
<td>125</td>
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<tr>
<td>Long-Term UR</td>
<td>32</td>
<td>326</td>
<td>90</td>
</tr>
</tbody>
</table>

Note: Unemployment rates by education are for persons age 25+. All other rates for persons age 16+ unless noted.

Sources of Remaining Elevation in U-6

Note: Marginally attached not counted in labor force. Shading denotes recession.
The Labor Force Participation Rate and the Employment-Population Ratio Are Well Below Pre-Recession Levels

Note: Shading denotes recession.
The Beveridge Curve Has Shifted Outward Relative to the 2000s Expansion But is Getting Closer

Outline of Today’s Talk

1. The Labor Market Recovery
2. Long-Term Unemployment
3. Part-Time for Economic Reasons
4. Labor Force Participation
5. Summary of Results, a Speculation, and Some (Brief) Policy Implications
Long-Term Unemployment Rose Extremely High In the Recession and Still Remains Slightly Elevated

Note: Shading denotes recession. Dashed lines indicate December 2001-December 2007 average.
Duration of Unemployment Increased Sharply in the Great Recession

Note: Twelve-month moving averages of not seasonally adjusted data.
Unemployment Duration Increasingly Skewed, with Mean Remaining at Highest-Ever Level and Median Near Highest Ever

Note: Shading denotes recession.
Long-Term Unemployed Look a Lot Like Short-Term Unemployed

Educational Attainment by Duration of Unemployment, 2015

<table>
<thead>
<tr>
<th>Duration of Unemployment</th>
<th>Less than high school</th>
<th>High school graduate</th>
<th>Some college</th>
<th>College graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed 26 Weeks or Fewer</td>
<td>15</td>
<td>33</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>Unemployed 27 Weeks or More</td>
<td>15</td>
<td>33</td>
<td>29</td>
<td>23</td>
</tr>
</tbody>
</table>

Note: Data for individuals 25 and older.
Long-Run Trend of Increasing Long-Term Unemployment

Note: Linear time trend is based on data from January 1948 to December 2007. Shading denotes recession.
Note: Increases are measured from the first month of the recession to the peak in the overall unemployment rate. The 1980s recessions are consolidated into a single cycle.
Increased Cyclical Sensitivity of Long-Term Unemployment (Ver. 2)

Note: Cumulative four-quarter response of long-term unemployment (as a share of the labor force) to an exogenous one-percentage-point increase in the unemployment rate. Results are derived from 20-year trailing VARs using three lags of quarter/quarter changes. Shading denotes 90 percent confidence interval.
But the Increase in the Long-term Unemployment Rate in the Great Recession Still Exceeds Previous Patterns

**Long-Term Unemployment Rate, 2005-2015**

Percent of Labor Force

Note: Predicted long-term unemployment rate is derived either from a VAR using data from the period shown with three lags of quarter/quarter changes, or from the simple ratio of the change in the long-term unemployment rate to the change in the unemployment rate in the cycle shown (using different ratios for contraction and expansion periods).

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5. Summary of Results, a Speculation, and Some (Brief) Policy Implications
Part-Time for Economic Reasons Rose Sharply in the Recession and Has Come Down Gradually in the Recovery

Most of Remaining Elevation in Part-Time for Economic Reasons is Concentrated in Service Industries

Note: Twelve-month moving averages of non-seasonally adjusted data. Shading denotes recession.
Increased Cyclicality of Part-time for Economic Reasons (Ver. 1)

Note: Increases are measured from the first month of the recession to the peak in the overall unemployment rate. The 1980s recessions are consolidated into a single cycle. Pre-1994 values for part-time for economic reasons are adjusted for the 1994 CPS redesign using the multiplicative adjustment factors reported in Polivka and Miller (1998).

Note: Pre-1994 values for part-time for economic reasons are adjusted for the 1994 CPS redesign using the multiplicative adjustment factors reported in Polivka and Miller (1998). Cumulative four-quarter response of part-time work for economic reasons (as a share of the labor force) to an exogenous one-percentage-point increase in the unemployment rate. Results are derived from 20-year trailing VARs using three lags of quarter/quarter changes. Shading denotes 90 percent confidence interval.

Elevated Part-Time Work for Economic Reasons: Cyclical or Structural?

Note: Predicted part-time for economic reasons rate is derived either from a VAR using data from the period shown with three lags of quarter/quarter changes, or from the simple ratio of the change in the part-time for economic reasons rate to the change in the unemployment rate in the cycle shown (using different ratios for contraction and expansion periods).

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The Long-Run Increase and Decline in the Labor Force Participation Rate

Labor Force Participation, 1901-2016

Note: Shading denotes recession.
Explaining the Post-2007 Decline in the Labor Force Participation Rate

The labor force participation rate fell 3.4 percentage points from 2007-Q4 to 2015-Q4. This can be attributed to:

**Structural**
1. **Aging trend.** This is the mechanical impact of, for example, having fewer 55-59 year olds (male LFPR = 77%) and more 70-74 year olds (male LFPR = 23%).
2. **Non-aging trend (predictable based on history absent a recession).** For example, male participation rates have been declining since the early 1950s and female participation rates have been declining since the late 1990s.

**Cyclical**
3. **Normal cyclical (predictable based on history given the actual unemployment rate).** Historically, for every 1 percentage point elevation in the unemployment rate, the participation rate is 0.1 to 0.2 percentage points lower.
4. **Unusual cyclical.** The Great Recession was unusually severe and hit a labor market that has undergone structural changes, making the cyclical impact different.

*Note – CEA’s statistical analysis combines 2 and 4 as a residual.*
Aging Trend Explains More Than Half of the Post-2007 Decline

Labor Force Participation Decomposition

Percent of Civilian Noninstitutional Population Age 16+

Note: Year axis denotes first quarter of year noted. See 2015 Economic Report of the President for methodological details. Components may not sum to total due to rounding. Source: Social Security Administration; Bureau of Labor Statistics; CEA calculations.
Longstanding, Persistent Non-Aging Trends in Labor Force Participation

Evolution of Labor Force Participation by Gender and Age

Labor Force Participation Rate, Men

Labor Force Participation Rate, Women

Prime-Age Men Not in the Labor Force Went from 3 Percent in 1953 to 5 Percent in 1972 to 12 Percent in 2015

Prime-Age Male Labor Force Nonparticipation Rate

Increase In Prime Age Male Nonparticipation Is Driven by Less-Educated


Increase in Prime Age Male Nonparticipation Roughly Similar at All Age Levels

Prime-Age Male Labor Force Nonparticipation by Birth Cohort

Increase in Prime Age Male Nonparticipation Not Explained By Increases in Working Spouses

At Most a Portion of the Increase Explained by Disability Insurance Receipt

Increased Educational Attainment Goes the Other Way

Decomposition of Ten-Year Changes in Labor Force Participation Rate by Educational Attainment, Prime-Age Men

Percentage Points per Year

Table: Oaxaca Decomposition of Changes in the Prime-Age Male Labor Force Nonparticipation Rate

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Change (p.p.)</td>
<td>3.4</td>
<td>5.2</td>
<td>8.6</td>
</tr>
<tr>
<td>Endowments</td>
<td>0.2</td>
<td>2.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Age (with Quadratic)</td>
<td>-0.4</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Child in Household</td>
<td>0.4</td>
<td>0.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Single</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Spouse in Labor Force</td>
<td>-0.4</td>
<td>0.3</td>
<td>-0.1</td>
</tr>
<tr>
<td>Educational Attainment</td>
<td>-0.4</td>
<td>-0.3</td>
<td>-0.9</td>
</tr>
<tr>
<td>Social Security Income</td>
<td>0.4</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Coefficients</td>
<td>2.4</td>
<td>3.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.9</td>
<td>-0.2</td>
<td>0.3</td>
</tr>
</tbody>
</table>
How Predictable Was the Fall in the Labor Force Participation Rate From Aging and Non-Aging Trends Without Factoring In the Recession?

Labor Force Participation Is Somewhat Cyclical

Note: Shading denotes recession.
Cyclical Sensitivity of the Labor Force Participation Rate Appears to Have Increased Over Time (Ver. 1)

Note: Ratio of change in detrended participation rate and detrended unemployment gap over recession period.
Cyclical Sensitivity of the Labor Force Participation Rate 
Less Clear Over Time (Ver. 2)

Note: Cumulative four-quarter response of detrended LFPR (using a biweight kernel) to an exogenous one-percentage-point increase in the unemployment rate. Results are derived from 20-year trailing VARs using three lags of quarter/quarter changes. Shading denotes 90 percent confidence interval.
Decomposition of the Decline in the Labor Force Participation Rate

Note: Year axis denotes first quarter of year noted. See 2015 Economic Report of the President for methodological details. Components may not sum to total due to rounding.
Source: Social Security Administration; Bureau of Labor Statistics; CEA calculations.
Evidence For Unusual Cyclical: Increased Mean Duration of Unemployment is Associated With Lower Participation

Note: Regression is estimated using data from 1960:Q1 to 2014:Q2. Newey-West standard errors using a maximum lag of 12 are reported in parentheses. Participation rate and unemployment gap are detrended using the procedure described in Appendix A. F-tests are joint significance tests of the disability insurance, mean duration, and schooling variables. * p<0.01.

Source: Social Security Administration; Bureau of Labor Statistics; CEA calculations.
Possible Summary of the Sources of the Post-Great Recession Decline in the Labor Force Participation Rate

Percent of Civilian Noninstitutional Population Age 16+

2001-06 Shift Continued
(Non-Aging Trend?)

Aging Trends

Change in Normal Cyclical

Mean Duration Effect
(Unusual Cyclical?)

Residual

Note: Year axis denotes first quarter of year noted. See 2015 Economic Report of the President for methodological details. Components may not sum to total due to rounding.
Source: Social Security Administration; Bureau of Labor Statistics; CEA calculations.
The United States Has Among the Lowest Participation Rates for Prime-Age Men in the OECD

Source: Organisation for Economic Co-operation and Development.
The United States Has Among the Lowest Participation Rates for Prime-Age Women in the OECD

Source: Organisation for Economic Co-operation and Development.
U.S. Labor Market Has High Flexibility But Low Supportiveness According to OECD’s *Going for Growth* Indicators

<table>
<thead>
<tr>
<th>OECD Measures of Labor Market Flexibility</th>
<th>U.S. Percentile Rank (100=Most Flexible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Labor Market Regulation</td>
<td>100</td>
</tr>
<tr>
<td>Employment Protection for Regular Employment</td>
<td>100</td>
</tr>
<tr>
<td>Scope of State Intervention</td>
<td>94</td>
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<tr>
<td>Minimum Cost of Labor</td>
<td>92</td>
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<tr>
<td>Coverage of Collective Bargaining Agreements</td>
<td>90</td>
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<tr>
<td>Labor Taxation</td>
<td>71</td>
</tr>
<tr>
<td>Barriers to Entrepreneurship</td>
<td>62</td>
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</table>

<table>
<thead>
<tr>
<th>OECD Measures of Institutional Labor Market Support</th>
<th>U.S. Percentile Rank (100=Most Supportive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationwide Paid Leave Policy</td>
<td>0</td>
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<tr>
<td>Expenditure on Active Labor Market Policies</td>
<td>3</td>
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<tr>
<td>Net Childcare Costs, Lone Parent</td>
<td>6</td>
</tr>
<tr>
<td>Implicit Tax on Returning to Work, Lone Parent</td>
<td>9</td>
</tr>
<tr>
<td>Unemployment Benefits (1 Year)</td>
<td>11</td>
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<tr>
<td>Unemployment Benefits (5 Years)</td>
<td>11</td>
</tr>
<tr>
<td>Number of Weeks Lost Due to Sick Leave</td>
<td>11</td>
</tr>
<tr>
<td>Net Childcare Costs, Couples</td>
<td>13</td>
</tr>
<tr>
<td>Implicit Tax on Returning to Work, Second Earner</td>
<td>13</td>
</tr>
<tr>
<td>Tax Wedge: Single Earner vs. Second-Earner Couples</td>
<td>25</td>
</tr>
<tr>
<td>Public Expenditure for Childcare</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Organisation for Economic Co-operation and Development.
But the United States is Generally Better at Labor Force Participation for the Young and for the Old—a Tradeoff?

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Unweighted OECD Mean</th>
<th>United States</th>
<th>SD from OECD Mean</th>
</tr>
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<tbody>
<tr>
<td>All</td>
<td>Male</td>
<td>68.9</td>
<td>69.2</td>
<td>0.05</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>54.8</td>
<td>57.0</td>
<td>0.24</td>
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<tr>
<td>15-24</td>
<td>Male</td>
<td>48.3</td>
<td>56.4</td>
<td>0.60</td>
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<tr>
<td>Female</td>
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<td>43.4</td>
<td>53.6</td>
<td>0.64</td>
</tr>
<tr>
<td>25-54</td>
<td>Male</td>
<td>91.7</td>
<td>88.2</td>
<td>-1.62</td>
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<tr>
<td>Female</td>
<td></td>
<td>77.9</td>
<td>73.9</td>
<td>-0.40</td>
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<tr>
<td>55-64</td>
<td>Male</td>
<td>68.1</td>
<td>69.9</td>
<td>0.15</td>
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<tr>
<td>Female</td>
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<td>51.4</td>
<td>58.8</td>
<td>0.50</td>
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<tr>
<td>65+</td>
<td>Male</td>
<td>16.9</td>
<td>23.0</td>
<td>0.50</td>
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<tr>
<td>Female</td>
<td></td>
<td>8.2</td>
<td>15.1</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Source: Organisation for Economic Co-operation and Development; CEA calculations.
Outline of Today’s Talk

1. The Labor Market Recovery
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5. Summary of Stylized Facts, Some Speculations, and Some (Brief) Policy Implications
Summary of Stylized Facts

• Strong recovery in labor market, but some slack remains in broader measures of underutilization
• The Great Recession resulted in unusually large adverse responses in long-term unemployment, part-time for economic reasons, and labor force participation relative to past recessions.
• There is some evidence that these three labor market issues are becoming more cyclically sensitive.
• There is also evidence for a longer-run trend deterioration in long-term unemployment and, especially, in labor force participation.
• The decline in prime-age male labor force participation is not readily explicable in terms of reduced labor supply or demographic factors; it is about worsening for less-educated men.
One Possible Explanation for Increased Cyclical Sensitivity of Labor Indicators: Declining Labor Market Fluidity


Trends in Hires and Separations, 1995-2012

Percent of Total Employment
More Indicators of Declining Labor Market Fluidity

Employer, Occupation, and Industry Transitions

Source: Molloy, Smith, and Wozniak (2014).
And More Indicators of Declining Fluidity

Percent of Population Finding and Exiting Jobs per Month

Note: Shading denotes recession.
One (Possible, Partial) Explanation of Declining Fluidity: the Rise of Occupational Licensing

Share of Workers with a State Occupational License

Difference in Migration Rates of Workers in Most vs. Least Licensed Occupations

Note: In bar chart, values calculated from OLS regression controlling for race, citizenship, sex, number of children, marital status, education, income, year, and state. Ages 25 to 65 were included.
Source: The Council of State Governments (1952); Greene (1969); Kleiner (1990); Kleiner (2006); Kleiner and Krueger (2013), Westat data; Census Bureau, American Community Survey 2010-2013; CEA calculations.
A Possible Factor in the Longer-Run Trend: Increased Job Polarization, 1980-2012

Changes in Employment by Occupational Wage Percentile

Change in Employment Share, Percentage Points

Source: Census Bureau, 1980 Census; Census Bureau, 2012 American Community Survey; calculations by David Autor and Brendan Price.
A Related Factor in the Long-run Trend: the Decline of Manufacturing Jobs

Manufacturing as Share of Total Nonfarm Employment, 1939-2016

Note: Shading denotes recession.
Some Policy Implications

1. Increase demand:
   • Further strengthen aggregate demand
   • Improve automatic stabilizers to limit the severity of future recessions
   • Increase investment in infrastructure to help address the demand for labor

2. Improve education, including high school and college completion

3. Increase connective tissue in labor markets
   • Training and apprenticeships
   • Better job-search assistance in Unemployment Insurance
   • Flexibility to use Unemployment Insurance for training/initial employment

4. Create flexibility for workers:
   • Flexible workplace practices including access to paid leave, paid sick days
   • Greater subsidies for high-quality child care and early learning
   • Reduce occupational licensing
   • Reform land-use restrictions
5. **Reform public programs to increase the incentives to work**
   - Reform tax treatment of secondary earners
   - Expand EITC for people without qualifying children (including noncustodial parents)
   - Reform Unemployment Insurance to level the playing field between layoffs and hours reductions
   - Establish wage insurance

6. **Criminal justice reform**

7. **Immigration reform**