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The unusual recovery from the Great Recession: U.S. labor force participation, investment and productivity growth after the last four recessions

U.S. economic performance since the Great Recession of 2008 has been poor and quite unlike previous recoveries from recessions. Productivity growth was high during 1995-2007, but after the collapse during the Financial Crisis, it did not recover during 2008-2015. Labor force participation of almost all age groups fell sharply in 2008 but recovered very slowly, in particular among the less educated population. Most of the discussion of this post-2008 performance has been in terms of macro variables such as aggregate productivity growth, investment, labor force participation rates of the whole adult population, or average wage of the whole labor force, since these are the most readily available data. There is, however, quite a bit of variation among the different sectors of the economies; varying performance of the different industries, varying wage trends of the different age-educational attainment groups, and varying recoveries of the participation rates of the different demographic groups, etc. Understanding this variation in performance may help identify more precisely the causes of the slow recovery, including how inter-industry linkages could have propagated the shocks.

In order to discuss U.S. economic performance at this more detailed level we have constructed a database of industry-level accounts, including data on output and inputs of capital, labor and intermediate goods for the entire post-War period, 1947-2015. Our labor accounts include the sex-age-education structure of each industry’s work force which allows us to classify the industries into a “high-human capital” group and a “low-human capital” groups. Our capital accounts allow us to classify industries into IT-producing, IT-intensive using, and non-IT groups. Our population data allow us to track the wage and participation rates of detailed sex-age-education.

In this paper we first document the evolution of educational attainment by 65 industries over 1947-2015, separating them into high, medium and low-human capital groups. We also document the growth of IT-investment and total factor productivity (TFP) growth at the industry level. In our previous work we have described how different groups performed in the main post-War eras – post-War boom (1947-73), Long Slump (1973-95), Investment boom (1995-2000), Jobless growth (2000-07), and Great Recession (2008-2015). Here we focus on the 5 years of recovery after the trough of the last four recessions (1981, 1991, 2001, 2008). We show how the sources of growth – capital accumulation, labor input growth, TFP growth – differed in these recoveries.

We shall discuss the role of capital quality and Information Technology (IT) in these recoveries, and discuss the changing educational levels of the work force. We also aim to document the changes in relative wages, how the wage premia for highly educated workers and young workers have changed, and how the premia trends differ by industry. There was a sharp fall in aggregate labor force participation during the Financial Crisis and a very slow recovery during 2008-2015; we shall describe the changes in labor force participation for each demographic group to calculate their contributions to the aggregate trend for each of the recoveries. These participation rates might be related to the relative wages of the different sex-age-education groups. It is well known that the less-educated workers had the biggest fall, and slowest recovery, of the participation rates; however, there is little examination of which industries are most affected by these trends.

A long strand of literature asked if TFP growth is related to the intensity of IT-capital input at the industry level. Here we examine how the TFP growth during the various recoveries might be related to the IT-intensity, the high-human capital intensity and the R&D capital intensity.