The El Khomri law (also called « Work » law) has triggered a lot of conflicting judgements among French economists. However no model has been used to evaluate its effects ex ante. We have developed over the past 10 years a model of the recent French labor market, in order to analyze in detail this market and do policy design and analysis. The model integrates the heterogeneity of agents, and their decisions (firms and workers) based on “search theory”, which gives rational microeconomic foundations to behavior, albeit with decision rules using bounded rationality rather than optimal rules which cannot be computed in the complex system that the modeled labor market constitutes. We introduce many institutions and specially the two main labor contracts, Open-Ended contracts and Fixed Term Contracts. The WorkSim model simulates the gross flows between inactivity, unemployment and these two types of employment, with a consistent accounting system. It is calibrated by a powerful algorithm to set 63 parameters to fit more than 64 aggregate real variables. We analyze only the facilitation of the economic dismissals allowed by the El Khomri law but it is the most essential element of the law for the labor market. We find that it has little effect on global unemployment but benefits the young who crowd out the seniors. This result is based on the substitution by the employers of more precarious Open Ended Contracts to Fixed Duration Contracts which become useless, and the fact that young workers are more often in Fixed Duration Contracts than the other age categories. The labor market is deeply transformed. When aggregate demand is exogenously changed, the experiment shows that the employment and the unemployment react faster than before the law.