Older and Slower: The Startup Deficit's Lasting Effects on Aggregate Productivity Growth

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The decade-long slowdown in U.S. labor productivity growth coincides with a dramatic shift in the age composition of employer businesses. Pugsley and Sahin (2014) show the latter shift in the age distribution is the effect of a more than thirty-year decline in the rate of new employer business creation or "startup deficit". They show that this decline in entry has had lasting effects on the dynamics of aggregate employment; in this paper we examine to what extent the slowdown in entry has also slowed aggregate productivity growth. Earlier work by Baily, Hulten and Campbell (BPEA, 1992) and Foster, Haltiwanger and Krizan (ReStat, 2006) among others has shown the crucial role of reallocation among establishments, primarily from entry and exit, in explaining aggregate productivity growth within the manufacturing and retail trade sectors. Foster, Haltiwanger and Syverson (AER, 2008) show how measures of productivity can change dramatically over the lifecycle of firms. Collectively, previous research suggests that the direct effect of declines in entry (and exit) and its indirect effect on the age distribution may have a large effect on the dynamics of aggregate productivity.

To examine the effects on productivity we turn to administrative Census data with near universal coverage of the non farm private sector. This will be, to our knowledge, the first paper to bring micro-evidence from outside the manufacturing and retail trade sectors to study the recent productivity growth decline. Building on work by Haltiwanger, Jarmin, Kulick, and Miranda (2014), we merge the Census Longitudinal Business Database (LBD) with data on annual sales from IRS records in the Census Business Register. With these administrative records we construct annual firm level measures of real sales per worker and sales per worker growth. Using these measures as rough proxies for labor productivity and productivity growth within narrow 4-digit NAICS industries, we quantify how the entire distribution of labor productivity evolves by firm age as well as other firm characteristics. In this way, we can decompose the contributions from entry, exit, and shifts in an industry's age composition of firms. Lacking reliable measures of prices over time, these data provide cross sectional evidence on the link between entry, exit, firm age and productivity dynamics. We use these cross sectional results to calibrate an equilibrium growth model with heterogeneous firms. The model allows us to estimate the aggregate consequences of the declines in entry for aggregate productivity in the time series. Using the model we quantify the total effect of the decades long startup deficit on aggregate productivity growth.

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