I study the effect of dynamic firm entry, scale economies and oligopolistic competition on measured productivity and output amplification. These features cause measured productivity (Solow residual) to exceed pure technology. I decompose measured productivity into pure technology and an endogenous component that is caused by firm-level output variation interacting with increasing returns to scale. In turn, I show that firm-level output variation depends on economic profits and markups that vary in response to dynamic entry and oligopolistic competition. I estimate the pure technology series adjusted for profits and markups and show that it is less volatile and more persistent than a benchmark model, whilst still generating output amplification.