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## *Discussion*

Chang-Tai Hsieh opened the general discussion with a question on measurement. The authors' model can be used to back out a measure of skill-biased technical change (SBTC), he noted. However, this measure is model dependent and its units vary with the parametrization, he argued. Hsieh asked the authors about a possible empirical counterpart to this measure. The authors agreed that their measure of quality or SBTC is model dependent. However, they argued that there is a formal equivalence between their model with SBTC and existing models with capital and skill complementarities (but no SBTC), such as Per Krusell, Lee E. Ohanian, José-Víctor Ríos-Rull, and Giovanni L. Violante ("Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis," *Econometrica* 68, no. 5 [2000]: 1029–53), for which units are somewhat more interpretable. In those models, changes in the price of capital increase the complementarity between capital and high-skill labor. This mechanism amplifies the response to shocks, they noted, just like the "trading up" phenomenon in their model.

Richard Blundell argued that the market for childcare constitutes a good case study of trading up. Childcare is a nontradable, low-skill good, he noted. However, the demand for this service has increased over time as women's incomes improved. In appearance, this runs counter to the authors' premise. But in reality, the composition of the demand for childcare changed, Blundell said. As incomes grew, so did the demand for skilled childcare. Blundell noted that the literature on the subject typically allows for variable quality in the production of care, much like in the authors' paper. The authors agreed with Blundell's comment. They added that childcare is a particularly interesting service in that it could be produced at home as well. Allowing for choices at the extensive margin would be an interesting extension, they said.

Erik Hurst inquired about the response of real wages to SBTC in the authors' model. The nominal wage of high-skill workers increases relative to that of low-skill workers. However, high-skill workers also consume the high-quality good, whose price also increases, in larger proportion. Hurst wondered whether the authors' model had a clear prediction in terms of consumption inequality. They agreed that the response of real wages could in theory be ambiguous. This is an interesting moment to look at in the data, they argued, and it could discipline their calibration.

Jonathan Parker noted that the authors' model is static. Allowing for lead or lag dynamics could be instructive, he noted. The authors were very sympathetic to Parker's suggestion. In particular, rich dynamics could emerge from lags in the adoption of new technologies for the production of high-quality goods or from slow training or skill reallocation, they mentioned.

Three topics dominated the rest of the discussion: further dimensions of heterogeneity, redistributive policies, and the effect of SBTC on real wages across skill groups.

On the first topic, Mark Gertler discussed a testable implication of the authors' amplification mechanism. He noted that high-skill workers employed by firms producing high-quality goods should benefit more from SBTC compared with those employed by firms producing low-quality goods. Gertler wondered whether the authors could confirm this prediction empirically. The authors were very receptive to Gertler's suggestion. They could indeed study inequality within skill groups, they mentioned, either across industries or across tasks, echoing a point raised by one of the discussants, Daron Acemoglu.

Chad Syverson emphasized another dimension of heterogeneity: geographic location. High-skill, wealthy individuals tend to cluster in metropolitan areas and crowd out lower-skill individuals, he suggested. Syverson argued that the corresponding decrease in the demand for low-quality, nontradable services could have contributed to the erosion of the city premium for low-skill workers, alluding to the work of David Autor ("Work of the Past, Work of the Future" [NBER Working Paper no. 25588, February, National Bureau of Economic Research, Cambridge, MA, 2019]). The authors were in agreement with Syverson's comment.

Turning to the second topic, Richard Blundell referred to recent evidence on the effect of redistributive policies. In particular, the literature has found that an increase in the minimum wage tends to increase demand for goods produced by minimum wage workers, Blundell noted. Similarly, he suggested that the expansion of the earned income tax credit

in the United States increased demand for low-quality care offered by female, low-wage workers. Acemoglu cited complementary evidence by Marco Leonardi, Michele Pellizzari, and Domenico Tabasso (“Wage Compression within the Firm: Evidence From an Indexation Scheme,” *Economic Journal* 129, no. 624 [2019]: 3256–91). The authors were very receptive to Blundell’s comment. Changing the minimum wage or increasing the progressivity of taxation should affect the composition of consumption and the corresponding demand for skills, they added. Exploring these effects is a promising avenue for future research, they argued.

On the third topic, Jonathan Parker and Martin Eichenbaum noted that the two discussants, Daron Acemoglu and Jonathan Vogel, seemed to disagree on the nature of SBTC and its implications for real wages across skill groups. Parker noted that both discussants assumed a linear time trend in SBTC in their models. Economic growth is more chaotic in reality, Parker argued, and so might be SBTC. Eichenbaum drew a parallel with Greg Kaplan’s discussion of the paper by Margherita Borella, Mariacristina De Nardi, and Fang Yang (“The Lost Ones: The Opportunities and Outcomes of Non-College Educated Americans Born in the 1960s” [NBER Working Paper no. 25661, March, National Bureau of Economic Research, Cambridge, MA, 2019]) earlier that day. Kaplan had emphasized the importance of measuring price indices correctly when comparing welfare across cohorts. In the context of the authors’ paper, Eichenbaum wondered whether accounting for differences in the consumption bundles across skill groups could help reconcile the discussants’ views. Acemoglu argued that accounting for heterogeneous consumption bundles would not overturn the decline in real wages observed in the data for the bottom 10% of the earnings distribution. Kaplan seconded Acemoglu on that point. This empirical observation was part of the motivation for Acemoglu’s framework.