

Table A.I: Reallocation terms of APG using PL's and BHC's approach

	1980s	1990s	Difference
PL's RE	-0.24	-0.35	-0.11
BHC's RE	-4.34	0.66	5.00

Note: This table shows the averages for the 1980s and the 1990s and the differences between them. PL's RE is in percent of aggregate value added. BHC's RE is in percentage points, which represents the contribution to growth of the weighted average of plant-level TFPs.

Online Appendix A: BHC's measure of reallocation effect

Among the many versions of the APG measure that is originally proposed by Baily et al. (1992), the one suggested by Foster et al. (2001) is defined as follows:

$$APG_t^{BHC} = TE_t + RE_t^{BHC} + NE_t^{BHC}, \quad (\text{E.1})$$

where

$$TE_t = \sum_{i \in \mathcal{S}_t} \bar{D}_{it} \Delta \ln A_{it}, \quad (\text{E.2})$$

$$RE_t^{BHC} = \sum_{i \in \mathcal{S}_t} \ln \bar{A}_{it} \Delta D_{it}, \quad (\text{E.3})$$

$$NE_t^{BHC} = \sum_{i \in \mathcal{E}_t} [D_{it} \ln A_{it}] - \sum_{i \in \mathcal{X}_{t-1}} [D_{i,t-1} \ln A_{i,t-1}], \quad (\text{E.4})$$

where A_{it} is the TFP of plant i at time t , $D_{it} := Y_{it}/V_t$ is the Domar weight, Y_{it} is gross output, V_t is the value added, and $\bar{x}_{it} := \frac{x_{i,t-1} + x_{it}}{2}$. The first term measures the change in technical efficiency, the second term captures the reallocation effect (RE), and the third term represents the net entry effect. Note that the technical efficiency term (E.2) is exactly the same as the TE in PL's APG measure (equation (2) in the main paper).

BHC's RE quantifies the change in average TFP generated by the change in the Domar weights of plants. BHC's RE increases if more production occurs among plants with higher TFP (A_{it}). However, the marginal products of inputs of higher TFP plants are not necessarily higher than those of lower TFP plants (Nishida et al. [2013]). Therefore, an increase in BHC's RE does not necessarily capture aggregate output growth driven by improved resource reallocation. In addition, unlike PL's RE, BHC's RE cannot be broken down into the contribution of reallocation of each input.

In the case of Japan in the 1990s, BHC's RE and PL's RE show contrasting results (Table A.I). The value for BHC's RE is higher for the 1990s than the 1980s, which is consistent with the finding by Fukao et al. (2006). However, the higher BHC's RE simply means that more production occurred among plants with higher TFP. In contrast, PL's RE term, which is based on the marginal product of inputs, is lower during the 1990s, indicating that resource reallocation during the 1990s contributed less to aggregate output.