We study how the composition of capital imports affects relative demand for skill and the skill premium in a sample of developing economies. Capital imports per se do not affect the skill premium; their composition does. While imports of R&D-intensive capital equipment raise the skill premium, imports of less innovative equipment lower the skill premium. We estimate that R&D-intensive capital is complementary to skilled workers, whereas less innovative capital equipment is complementary to unskilled labor - which explains the composition effect. This mechanism has substantial explanatory power. We document larger tariff cuts and smaller distance-related import costs for R&D-intensive capital equipment versus less innovative equipment, implying that on average trade liberalization increases inequality through the composition channel.