Specific Factors Models:

Argument to show that an increase in the endowment of the specific factor decreases the real return (per unit) of both specific factors.

Assumptions:
- (1)   3 factors : labor (L, mobile) , land (T, specific to food sector), capital (K, specific to manufacturing sector).
- (2)   2 goods: manufactures (M) and food (F).
- (3)   Production Functions:

$$q_M = f_M (L_M , K)$$
$$q_F = f_F (L_F , T)$$

Both production functions exhibit constant returns to scale (they are homogeneous of degree one) and are assumed to be increasing functions of both inputs.
- (4)   Perfect competition.

Implications from our assumptions:

(5) Our assumption (3) implies that the marginal products are functions of the input ratios used. Specifically,

Food sector:

MPL_F is a decreasing function of L_F / T or an increasing function of T / L_F .

MPT is a decreasing function of T / L_F or an increasing function of L_F / T.

Manufacturing sector:

MPL_M is a decreasing function of L_M / K or an increasing function of K / L_M .

MPK is a decreasing function of K / L_M or an increasing function of L_M / K.

(6) Our assumption (4) implies that factors are paid the value of their marginal product:

Food sector:
- (7) $w = MPL_F \cdot p_F$ or $w/p_F = MPL_F$ and
- (8) $R_T = MPT \cdot p_F$ or $R_T / p_F = MPT$

Manufacturing sector:
- (9) $w = MPL_M \cdot p_M$ or $w/p_M = MPL_M$ and
- (10) $R_K = MPK \cdot p_M$ or $R_K / p_M = MPK$

Effects on specific factors rewards of an increase in the endowment of Land:

An increase in T, shifts out the entire curve MPL_F because all the new land has to be employed in the food sector. The food sector's demand for labor is now higher at every wage rate , labor shifts from the manufacturing sector towards the food sector and at the new equilibrium, the wage rate is higher.

Since commodity prices are fixed, w/p_F and w/p_M are higher and from (7) and (9) we get that the marginal product of labor is higher in both sectors. From implication (5) we conclude that both T/ L_F and K/ L_M are higher.

Using (5) again this implies that both MPT and MPK are lower. From (8) and (10) we get that R_T / p_F and R_K / p_M are lower.