When $\overline{B} = \overline{B}_2 < B_{op}$, and given $Q = Q_o$, the highest productivity is at point (A_2, B_2). Yet the costs of the two mixes are the same—both fall on the line $P_A . A + P_B . B = Q_o$.

$$C(A_2, B_2) = C(A_{op}, B_{op}) = Q.$$

but

$$E(A_2, B_2) < E(A_{op}, B_{op}).$$

Thus, when this grade control is not irrelevant, it always reduces cost-effectiveness in terms of productivity per dollar of cost.

3.2 Effect of Control over Average Salary

Let S = maximum average salary. Thus

$$\frac{P_A . A + P_B . B}{(A + B)} \leq S.$$

For the interesting case, assume that $P_A < S < P_B$. Then $(S-P_A) > O$, and $(S - P_B) < O$. Also

$$P_A . A + P_B . B \leq (A + B)S$$

$$B(P_B - S) \leq A(S - P_A)$$

$$B \leq \frac{(S - P_A)}{(P_B - S)} . A$$

Figure 5

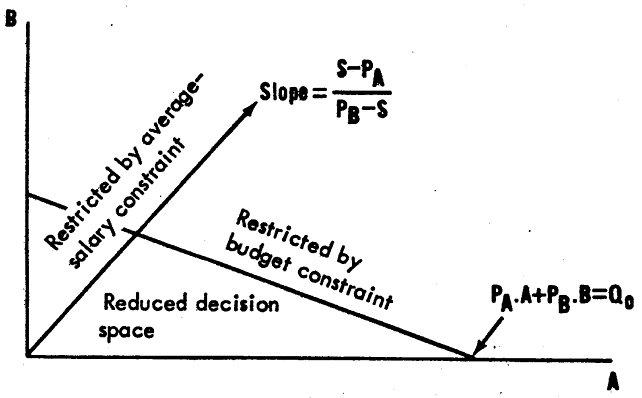

Figure 5 illustrates how control of average salary reduces the decision "space" available to the local line manager. Figure 6 shows the influence of this constraint on the effectiveness of his decisions.