When $\overline{B}=\overline{B}_2< B_{op}$, and given $Q=Q_o$, the highest productivity is at point (A2, B2). Yet the costs of the two mixes are the same—both fall on the line PA.A+PB.B=Qo.

but

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

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

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

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

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

$$P_A \cdot A + P_B \cdot B \le (A + B)S$$

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

Figure 5

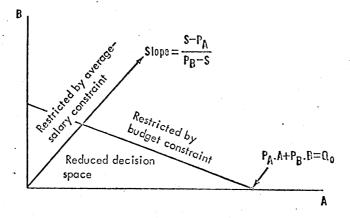


Figure 5 illustrates how control of average salary reduces the decision "space" available to the local line manager. Figure 6 shows the influence of this constraint on the effectiveness of his decisions.