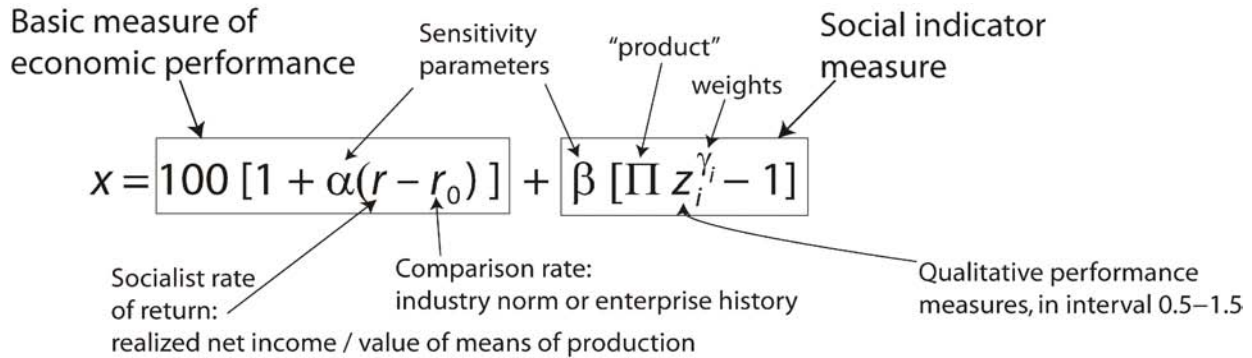


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## Multilevel Democratic Iterative Coordination (MDIC)

Three key questions for socialist theory:

### 1. How can/should enterprise performance (planned; actual) be measured?



Simple case:  $\alpha = 2$ ,  $\beta = 4$ , there are *four*  $z$ 's, and all of the  $\gamma$ s = 1:

$$x = 100 [1 + 2(r - r_0)] + 4(z_1 z_2 z_3 z_4 - 1)$$

Ecology

Community

Solidarity

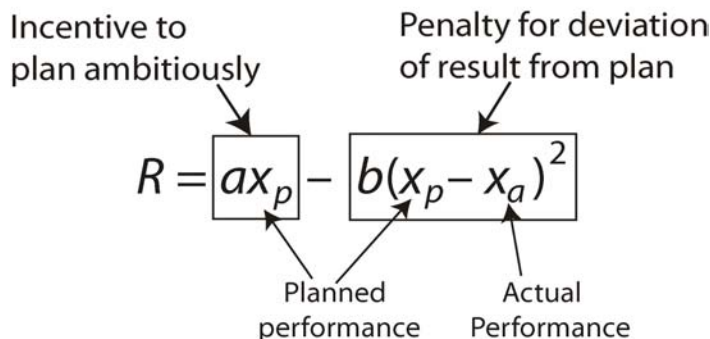
Industry

If  $r = r_0$  and all  $z_i = 1$ , then  $x = 100$ . The baseline performance.

Example:  $r - r_0 = 0.01$ , and  $z = (1.3, 1.2, 0.8, 1)$ . Then  
 $x = 102 + 4(1.248) = 102 + 4.992 = 106.992$

### 2. How can the enterprise be rewarded for *both* ambitious planning and exact plan fulfillment?

#### The Reward Function



Example:  $a = 10$ ,  $b = 5$ ,  
 $x_a = 105$ , constant.

Then  $R = 10x_p - 5(x_p - x_a)^2$

Example, next page:

With  $a = 10, b = 5, R = 10x_p - 5(x_p - x_a)^2$ , and  $x_a$  constant at 105:

**3. If the enterprise is self-regarding (it maximizes  $R$ ), how close will it come to planning and achieving its own best possible result?**

**The Collective Morale Function**

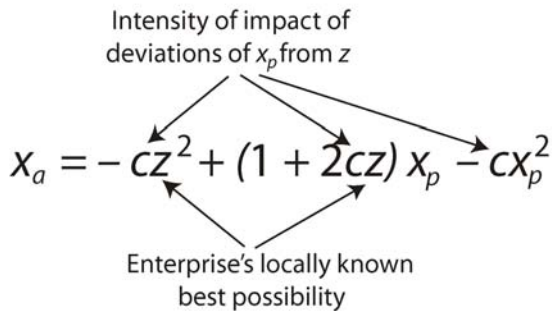


Table 1

$x_p$	$x_a$	$R$
100	105	875
101	105	930
102	105	975
103	105	1010
104	105	1035
105	105	1050
<b>106</b>	<b>105</b>	<b>1055</b>
107	105	1050
108	105	1035
109	105	1010
110	105	975

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Example:  $z = 105, c$  (for simplicity)  $= 1$ . Then  $x_a = -11025 + 211x_p - x_p^2$

From first two columns in Table 2, we see that if  $x_p = z$ , then that is what the enterprise accomplishes. If  $x_p$  deviates from  $z$  in either direction, morale is harmed and the enterprise does not even achieve  $x_p$ . Morale matters.

Table 2

$x_p$	$x_a$	$R = 10x_p - 5(x_p - x_a)^2$
102	93	615
103	99	950
104	103	1035
105	105	1050
105.2	105.16	1051.992
105.4	105.24	1053.872
105.6	105.24	1055.352
<b>105.8</b>	<b>105.16</b>	<b>1055.952</b>
106	105	1055
107	103	990
108	99	675

Main result:  
The R-maximizing plan ( $x_p^*$ ) is *greater than* the enterprise's best use of local knowledge,  $z$ .

Table 3

$c$	$R^{\max}$	$x_p^*$
1	1055.952	105.8
2	1053.75	105.5
3	1052.848	105.4
10	1051.2	105.2
50	1050.438	105.06

As the socialist working people matures,  $c$  grows;  $x_p \rightarrow z$ . *Based on the objective requirement of autonomy, creativity and principled rational participation in production, self-regarding behavior and truth-telling in local plan formation progressively coincide.* Local knowledge is harnessed; aggregate (central) plans are more and more solidly grounded. **MDIC works.**