Comparing the Cost of Emission Reductions in First and Second-Best Economies

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In a sequence of illuminating papers Goulder, Parry, Burtraw and Williams decompose the effects of using environmental instruments like taxes and quotas within a second-best setting, i.e., in the presence of pre-existing taxes. We find this part of their analyses most revealing.

They also perform numerical analyses from which they conclude that pre-existing taxes raise the costs of environmental policies relative to their costs in a first-best world. The observation is valid as far as the *marginal* cost per percentage emission reduction is concerned, but not so for *total* welfare costs of obtaining an emission target. In fact, employing their model we demonstrate by computing the excess burden of taxation, that the second-best welfare index falls at a slower rate than the first-best welfare index, such that the welfare costs of reducing emissions in second best are lower.