Abstract: While the cap-and-trade program was originally proposed as a static regulation, its implementation introduces dynamic incentives such as saving (banking) of emissions permits and long-run abatement investment. I examine the performance of the program by accounting for dynamic regulatory design and firms' incentives in the context of the US Acid Rain Program. I develop and estimate a dynamic equilibrium model of abatement investment and permit trading and banking, subject to transaction costs. Simulations reveal that although permit banking improves the cost-efficiency, the aggregate level of permit banking is excess due to transaction costs. Equilibrium distribution of emissions is more dispersed in the first best than the baseline outcome.