Extended second welfare theorem for nonconvex economies with infinite commodities and public goods

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Abstract. This paper is devoted to the study of nonconvex models of welfare economics with public goods and infinite-dimensional commodity spaces. Our main attention is paid to new extensions of the fundamental second welfare theorem to the models under consideration. Based on advanced tools of variational analysis and generalized differentiation, we establish appropriate approximate and exact versions of the extended second welfare theorem for Pareto, weak Pareto, and strong Pareto optimal allocations in both marginal price and decentralized price forms.

Key words: welfare economics, public goods, Pareto optimal allocations, second welfare theorem, variational analysis, generalized differentiation, extremal principle