The bearing of duality on microeconomics

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Abstract. We present some observations about links between some classical theories of microeconomics and dualities which have been used in optimization theory and in the study of first-order Hamilton-Jacobi equations. We introduce a variant of the classical indirect utility function called the wary indirect utility function and a variant of the expenditure function. We focus the attention on the links between these functions, observing that they have better relationships with the direct functions than their classical forms and we give economic interpretations of them.

Key words: conjugacy, cost function, duality, expenditure function, indirect utility function, polarity, price, subdifferential, utility function.