

# Flexible Top Trading Cycles and Chains Mechanism: Maintaining Diversity in Erasmus Student Exchange\*

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## Abstract

In Europe, every year more than 200,000 college students study in different countries thanks to the Erasmus Student Exchange program. The program aims to improve the integration all around the Europe. Although this exchange program is successful in many dimensions, it has two major drawbacks. First of all, the number of exchange students imported and exported by countries are not balanced. Unbalanced exchange causes financial burden for countries that are importing more exchange students than their exports. Secondly, we do not observe diversity among the exchange students. That is, certain countries are exchanging students mainly between each other. To solve these two problems observed in the current practice, we propose a version of Top Trading Cycles and Chains (TTCC) mechanism. We show that our mechanism solves these observed problems while satisfying constrained efficiency, strategy-proofness

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and fairness. Moreover, TTCC may increase the number of students benefiting from the Erasmus program. To our knowledge, this is the first application of TTCC mechanism to the many to one market, and this is the first paper solving distributional constraints via Top Trading Cycles type mechanism.