Online Appendix to Matching, Unanticipated Experiences, Divorce, Flirting, Rematching, Etc.*

Burkhard C. Schipper† Tina Danting Zhang‡

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Abstract

We apply our observation that frictions are necessary for decentralized matching processes to converge to stable outcomes to entry in matching markets.

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Application of the Cyclic Example to Two-Sided Market Entry

In this appendix, we present another application of our observation in Section 2 to market entry in matching markets. Bennett (1994) considers adding a *single* agent (say, a woman) to a marriage market with stable matching, and shows that the process (i.e., optimal divorce and remarriage procedure) of satisfying the optimal blocking pair for the unmatched woman terminates in a finite number of steps and reaches a stable matching. We consider an extended problem by adding *both* a woman and a man to marriage market with a stable matching and allow satisfying of mutually optimal blocking pairs. In contrast to Bennett's problem of adding a *single* agent only, a modification of our example shows that this process can now lead to a cycle.

The initial matching market consists of three man $\{m_1, m_3, m_4\}$, and three woman $\{w_2, w_3, w_4\}$. Let the preference profile be consistent with the preferences in Example 2. That is, we consider

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†Department of Economics, University of California, Davis. Email: bcschipper@ucdavis.edu

‡Department of Economics, University of California, Davis. Email: tdzhang@ucdavis.edu

the rank-order lists as in Example 2 but cross out m_2 and w_1:

$$
\begin{aligned}
&\succ_{m_1}: \quad w_2, w_4, w_3, \cancel{w_1} \\
&\cancel{\succ_{m_2}}: \quad \cancel{w_4}, \cancel{w_2}, \cancel{w_1}, \cancel{w_3} \\
&\succ_{m_3}: \quad \cancel{w_1}, w_3, w_2, w_4 \\
&\succ_{m_4}: \quad w_3, \cancel{w_1}, w_4, w_2 \\
&\cancel{\succ_{w_1}}: \quad \cancel{m_1}, \cancel{m_2}, \cancel{m_4}, \cancel{m_3} \\
&\succ_{w_2}: \quad m_4, m_3, \cancel{m_2}, m_1 \\
&\succ_{w_3}: \quad \cancel{m_2}, m_1, m_3, m_4 \\
&\succ_{w_4}: \quad m_3, m_4, m_1, \cancel{m_2}
\end{aligned}
$$

Let the initial matching be $\mu_1 = \begin{pmatrix} m_1 & m_3 & m_4 \\ w_2 & w_3 & w_4 \end{pmatrix}$, which is stable (without m_2 and w_1). Add m_2 and w_1 to the market. The unique mutually optimal blocking pair is (m_2, w_2) . Satisfying (m_2, w_2) leads to the matching $\mu_2 = \begin{pmatrix} m_1 & m_2 & m_3 & m_4 & w_1 \\ m_1 & w_2 & w_3 & w_4 & w_1 \end{pmatrix}$, which is the same as in the cycle in Example 2 in main text (Schipper and Zhang, 2025). As illustrated before, there is always a unique mutually optimal blocking pair along this path, and it cycles back to μ_2. This observation shows that Bennett's optimal divorce and remarriage procedure cannot easily be extended to situations where both a man and a woman are added to the market at the same time.

References

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