(Cont'd) Changes of $Y_{12}(q, M_t)$ as M_t expands. For each t, we show the ratings for each new member of M_t , the values X_{12} for this new member, and Y_{12} for the collection M_t up to the inclusion of this new member.

| | | | | | | (m_t) if | | | | | Y ₁₂ (| $q, M_t)$ | | | | |
|----------------------|----------------------|--------------|--------------|---------------|---------------|-----------------|--------------|---------------------|----------------|----------------|-------------------|----------------|----------------|----------------|---------------------|----------------|
| M_t | m_t | r_1 | r_2 | $r_1 - r_2$ | $q \in m_t$ | $q \not\in m_t$ | q_0 | q_1 | q_2 | q_3 | q_4 | q_5 | q_6 | q_7 | q_8 | q_9 |
| M ₈₅ | m_{85} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.18 | 1.02 | 0.69 | -0.16 | 0.00 | -0.29 | 0.39 | 0.84 | 1.27 | 0.06 |
| M86 | m_{86} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.20 | 1.04 | 0.65 | -0.18 | 0.04 | -0.31 | 0.36 | 0.87 | 1.24 | 0.09 |
| M ₈₇ | m_{87} | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.20 | 1.05 | 0.66 | -0.18 | 0.03 | -0.31 | 0.38 | 0.87 | 1.22 | 0.09 |
| M ₈₈ | m_{88} | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.20 | 1.05 | 0.67 | -0.18 | 0.03 | -0.29 | 0.37 | 0.88 | 1.20 | 0.08 |
| M ₈₉ | m_{89} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.16 | 1.07 | 0.70 | -0.15 | 0.06 | -0.31 | 0.34 | 0.85 | 1.22 | 0.06 |
| M_{90} | m_{90} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.18 | 1.09 | 0.67 | -0.11 | 0.04 | -0.33 | 0.37 | 0.87 | 1.18 | 0.04 |
| M_{91} | m ₉₁ | 0.40 | 0.60 | -0.20 0.20 | -2.00 3.00 | 3.00 -2.00 | 1.15 1.12 | 1.11 | $0.69 \\ 0.72$ | -0.08 -0.10 | 0.02 | -0.35 -0.37 | 0.40 | $0.89 \\ 0.92$ | 1.15 | 0.02 -0.01 |
| M ₉₂ | m ₉₂ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.08 | $\frac{1.13}{1.15}$ | 0.69 | -0.16 | $0.05 \\ 0.03$ | -0.33 | $0.43 \\ 0.40$ | 0.94 | $\frac{1.12}{1.14}$ | -0.01 |
| M ₉₃ | m ₉₃ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.05 | 1.17 | 0.66 | -0.08 | 0.06 | -0.30 | 0.38 | 0.94 | 1.14 | -0.05 |
| M_{94} M_{95} | $m_{94} \\ m_{95}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.07 | 1.14 | 0.63 | -0.05 | 0.04 | -0.26 | 0.35 | 0.98 | 1.18 | -0.07 |
| M ₉₆ | m ₉₆ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.04 | 1.16 | 0.66 | -0.02 | 0.01 | -0.28 | 0.33 | 0.95 | 1.19 | -0.04 |
| M ₉₇ | m ₉₇ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.06 | 1.13 | 0.68 | 0.01 | -0.01 | -0.25 | 0.30 | 0.92 | 1.21 | -0.06 |
| M ₉₈ | m ₉₈ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.08 | 1.09 | 0.70 | -0.01 | -0.03 | -0.21 | 0.28 | 0.89 | 1.23 | -0.03 |
| M ₉₉ | m ₉₉ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.10 | 1.11 | 0.73 | 0.02 | -0.05 | -0.23 | 0.26 | 0.86 | 1.20 | 0.00 |
| $ M_{100} $ | m_{100} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.08 | 1.12 | 0.73 | 0.02 | -0.05 | -0.22 | 0.25 | 0.87 | 1.20 | 0.00 |
| M_{101} | m_{101} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.10 | 1.13 | 0.76 | 0.00 | -0.07 | -0.18 | 0.28 | 0.84 | 1.17 | -0.02 |
| M_{102} | m_{102} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.10 | 1.14 | 0.76 | 0.01 | -0.07 | -0.19 | 0.27 | 0.83 | 1.17 | -0.02 |
| M_{103} | m_{103} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.12 | 1.15 | 0.73 | 0.04 | -0.09 | -0.15 | 0.25 | 0.80 | 1.19 | -0.04 |
| M_{104} | m_{104} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.14 | 1.17 | 0.71 | 0.07 | -0.11 | -0.17 | 0.23 | 0.82 | 1.16 | -0.01 |
| M_{105} | m_{105} | 0.60 | 0.40 | 0.20 0.20 | 3.00 | -2.00 -2.00 | 1.16 | 1.19 | $0.73 \\ 0.70$ | 0.10 | -0.13 | -0.19 | 0.25 | 0.79 | 1.13 | -0.03 |
| M ₁₀₆ | m ₁₀₆ | 0.60 0.40 | 0.40 | -0.20 | 3.00 -2.00 | 3.00 | 1.18 1.19 | 1.21 1.18 | 0.70 | $0.08 \\ 0.06$ | -0.14 -0.11 | -0.21 -0.18 | $0.28 \\ 0.26$ | $0.81 \\ 0.83$ | $\frac{1.10}{1.07}$ | 0.00 -0.02 |
| M_{107} | $m_{107} \\ m_{108}$ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.16 | 1.19 | 0.75 | 0.04 | -0.09 | -0.19 | 0.24 | 0.85 | 1.04 | 0.01 |
| $M_{108} M_{109}$ | $m_{108} \\ m_{109}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.18 | 1.16 | 0.77 | 0.04 | -0.10 | -0.19 | 0.24 | 0.87 | 1.04 | 0.01 |
| M ₁₁₀ | m_{110} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.20 | 1.14 | 0.79 | 0.09 | -0.08 | -0.23 | 0.20 | 0.89 | 0.98 | 0.02 |
| M_{111} | m ₁₁₁ | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.20 | 1.14 | 0.79 | 0.09 | -0.08 | -0.21 | 0.19 | 0.88 | 0.99 | 0.01 |
| M_{112}^{111} | m_{112}^{111} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.17 | 1.15 | 0.81 | 0.11 | -0.09 | -0.23 | 0.17 | 0.86 | 1.01 | 0.04 |
| $ M_{113}$ | m_{113} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.14 | 1.17 | 0.83 | 0.09 | -0.07 | -0.24 | 0.15 | 0.88 | 0.98 | 0.07 |
| M_{114} | m_{114} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.16 | 1.19 | 0.81 | 0.08 | -0.04 | -0.22 | 0.13 | 0.89 | 0.95 | 0.05 |
| M_{115} | m_{115} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.13 | 1.16 | 0.83 | 0.10 | -0.01 | -0.23 | 0.12 | 0.91 | 0.97 | 0.03 |
| M_{116} | m_{116} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.13 | 1.16 | 0.83 | 0.10 | -0.02 | -0.23 | 0.11 | 0.92 | 0.96 | 0.04 |
| M_{117} | m_{117} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.13 | 1.16 | 0.82 | 0.09 | -0.01 | -0.23 | 0.11 | 0.92 | 0.96 | 0.04 |
| M_{118} | m ₁₁₈ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.15 | 1.14 | 0.84 | 0.12 | -0.02 | -0.21 | 0.09 | 0.94 | 0.94 | 0.02 |
| M_{119} | m ₁₁₉ | 0.60 | 0.40 | 0.20 0.20 | 3.00 3.00 | -2.00 -2.00 | 1.12 1.14 | $\frac{1.11}{1.12}$ | $0.86 \\ 0.87$ | $0.14 \\ 0.13$ | -0.04 -0.01 | -0.22 -0.24 | $0.07 \\ 0.10$ | $0.95 \\ 0.93$ | $0.95 \\ 0.93$ | $0.05 \\ 0.03$ |
| $M_{120} \\ M_{121}$ | $m_{120} \\ m_{121}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.15 | 1.14 | 0.85 | 0.11 | 0.01 | -0.25 | 0.12 | 0.91 | 0.95 | 0.01 |
| M_{122} | $m_{121} \\ m_{122}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.13 | 1.11 | 0.87 | 0.11 | -0.01 | -0.26 | 0.12 | 0.92 | 0.96 | 0.04 |
| M ₁₂₃ | m ₁₂₃ | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.13 | 1.12 | 0.86 | 0.13 | -0.01 | -0.27 | 0.10 | 0.93 | 0.97 | 0.05 |
| M_{124}^{123} | m_{124} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.14 | 1.09 | 0.84 | 0.15 | -0.02 | -0.28 | 0.08 | 0.94 | 0.98 | 0.07 |
| M_{125}^{124} | m ₁₂₅ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.16 | 1.07 | 0.81 | 0.13 | -0.04 | -0.25 | 0.11 | 0.96 | 1.00 | 0.05 |
| M_{126} | m_{126} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.13 | 1.08 | 0.79 | 0.16 | -0.06 | -0.27 | 0.13 | 0.98 | 1.02 | 0.04 |
| M_{127} | m_{127} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.11 | 1.06 | 0.81 | 0.18 | -0.07 | -0.24 | 0.11 | 0.99 | 1.03 | 0.02 |
| M_{128} | m_{128} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.09 | 1.07 | 0.83 | 0.16 | -0.05 | -0.22 | 0.10 | 0.97 | 1.05 | 0.01 |
| M_{129} | m_{129} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.06 | 1.09 | 0.84 | 0.18 | -0.06 | -0.23 | 0.12 | 0.95 | 1.06 | -0.01 |
| M_{130} | m_{130} | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.06 | 1.09 | 0.85 | 0.19 | -0.06 | -0.23 | 0.12 | 0.95 | 1.05 | -0.01 |
| M_{131} | m ₁₃₁ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.04 | 1.07 | 0.86 | 0.18 | -0.04 | -0.24 | 0.10 | 0.96 | 1.07 | 0.01 |
| M ₁₃₂ | m ₁₃₂ | 0.20 | 0.80 | -0.60 0.20 | -0.33 3.00 | 1.33 -2.00 | 1.04 1.02 | $\frac{1.07}{1.08}$ | $0.87 \\ 0.84$ | $0.18 \\ 0.17$ | -0.04 -0.06 | -0.24 -0.26 | $0.10 \\ 0.12$ | $0.97 \\ 0.98$ | $\frac{1.06}{1.07}$ | $0.01 \\ 0.03$ |
| M ₁₃₃ | m ₁₃₃ | 0.40 | 0.40 | -0.20 | -2.00 | 3.00 | 1.02 | 1.06 | 0.84 | 0.17 | -0.07 | -0.23 | 0.12 | 0.98 | 1.07 | 0.03 |
| $M_{134} \\ M_{135}$ | $m_{134} \\ m_{135}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.01 | 1.07 | 0.84 | 0.14 | -0.09 | -0.23 | 0.14 | 0.97 | 1.10 | 0.00 |
| M ₁₃₆ | m ₁₃₆ | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.01 | 1.06 | 0.84 | 0.13 | -0.09 | -0.20 | 0.16 | 0.98 | 1.10 | 0.00 |
| M_{137}^{130} | m ₁₃₇ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.03 | 1.04 | 0.82 | 0.15 | -0.10 | -0.21 | 0.18 | 0.99 | 1.11 | -0.02 |
| M ₁₃₈ | m_{138} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.04 | 1.06 | 0.80 | 0.14 | -0.08 | -0.19 | 0.16 | 0.97 | 1.13 | -0.03 |
| M ₁₃₉ | m_{139} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.06 | 1.07 | 0.82 | 0.16 | -0.09 | -0.17 | 0.15 | 0.95 | 1.11 | -0.05 |
| M_{140} | m_{140} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.07 | 1.08 | 0.80 | 0.14 | -0.07 | -0.18 | 0.17 | 0.93 | 1.12 | -0.06 |
| II M141 | m_{141} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.05 | 1.10 | 0.81 | 0.13 | -0.05 | -0.16 | 0.15 | 0.94 | 1.10 | -0.07 |
| M142 | m_{142} | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.05 | 1.09 | 0.82 | 0.12 | -0.04 | -0.16 | 0.15 | 0.95 | 1.10 | -0.07 |
| M142 | m ₁₄₃ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.06 | 1.10 | 0.80 | 0.11 | -0.05 | -0.17 | 0.17 | 0.92 | 1.11 | -0.05 |
| M144 | m ₁₄₄ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.08 | 1.08 | 0.81 | 0.13 | -0.03 | -0.18 | 0.15 | 0.94 | 1.09 | -0.07 |
| M145 | m ₁₄₅ | 0.80 0.40 | 0.20 | 0.60 -0.20 | 1.33 -2.00 | -0.33 3.00 | 1.08 1.06 | 1.08 1.06 | $0.82 \\ 0.83$ | $0.13 \\ 0.11$ | -0.03 -0.01 | -0.18 -0.16 | $0.15 \\ 0.14$ | $0.93 \\ 0.94$ | $\frac{1.09}{1.10}$ | -0.06 -0.07 |
| M ₁₄₆ | m146 | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.04 | 1.04 | 0.85 | 0.11 | 0.01 | -0.17 | 0.14 | 0.94 | 1.12 | -0.05 |
| $M_{147} \\ M_{148}$ | $m_{147} \\ m_{148}$ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.04 | 1.04 | 0.86 | 0.10 | -0.01 | -0.17 | 0.12 | 0.97 | 1.10 | -0.03 |
| M_{149} | $m_{148} \\ m_{149}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.00 | 1.06 | 0.84 | 0.14 | 0.01 | -0.20 | 0.09 | 0.99 | 1.11 | -0.04 |
| M ₁₅₀ | m_{150} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.01 | 1.08 | 0.86 | 0.12 | 0.00 | -0.18 | 0.08 | 0.97 | 1.09 | -0.02 |
| M_{151} | m_{151} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.01 | 1.08 | 0.85 | 0.13 | 0.00 | -0.18 | 0.08 | 0.97 | 1.09 | -0.02 |
| M_{152} | m_{152} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.03 | 1.06 | 0.83 | 0.15 | -0.01 | -0.16 | 0.06 | 0.98 | 1.10 | -0.04 |
| $ M_{153} $ | m ₁₅₃ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.01 | 1.07 | 0.81 | 0.14 | 0.00 | -0.17 | 0.08 | 1.00 | 1.12 | -0.05 |
| M154 | m_{154} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.02 | 1.08 | 0.82 | 0.15 | 0.02 | -0.18 | 0.07 | 0.98 | 1.09 | -0.06 |
| $11 - M_1 = 155$ | m_{155} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.00 | 1.06 | 0.84 | 0.14 | 0.01 | -0.19 | 0.09 | 0.99 | 1.11 | -0.04 |
| W156 | m_{156} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.01 | 1.04 | 0.85 | 0.16 | 0.03 | -0.20 | 0.07 | 0.97 | 1.12 | -0.06 |
| M_{157} | m_{157} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 0.99 | 1.06 | 0.87 | 0.14 | 0.02 | -0.22 | 0.09 | 0.95 | 1.13 | -0.04 |
| M ₁₅₈ | m ₁₅₈ | 0.60 0.60 | 0.40 0.40 | 0.20 0.20 | 3.00 3.00 | -2.00 -2.00 | 1.01 1.02 | $\frac{1.04}{1.05}$ | $0.88 \\ 0.89$ | $0.16 \\ 0.18$ | 0.00 -0.01 | -0.20 -0.18 | $0.08 \\ 0.07$ | $0.96 \\ 0.95$ | 1.11 1.09 | -0.05 -0.06 |
| M_{159} | m ₁₅₉ | 0.80 | 0.20 | 0.20 | 1.33 | -0.33 | 1.02 | 1.05 | 0.89 | 0.18 | -0.01 | -0.18 | 0.07 | 0.95 | 1.09 | -0.06 |
| $M_{160} M_{161}$ | $m_{160} \\ m_{161}$ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.02 | 1.03 | 0.90 | 0.19 | -0.01 | -0.19 | 0.05 | 0.93 | 1.11 | -0.04 |
| M_{162}^{161} | m_{162} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.04 | 1.04 | 0.88 | 0.19 | -0.03 | -0.20 | 0.07 | 0.94 | 1.09 | -0.02 |
| M ₁₆₃ | m ₁₆₃ | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.06 | 1.06 | 0.89 | 0.21 | -0.02 | -0.21 | 0.06 | 0.92 | 1.07 | -0.04 |
| M_{164}^{163} | m_{164} | 0.20 | 0.80 | -0.60 | -0.33 | 1.33 | 1.06 | 1.06 | 0.90 | 0.21 | -0.02 | -0.21 | 0.05 | 0.92 | 1.07 | -0.03 |
| M_{165} | m ₁₆₅ | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.07 | 1.07 | 0.91 | 0.19 | 0.00 | -0.22 | 0.04 | 0.90 | 1.05 | -0.01 |
| M_{166} | m_{166} | 0.40 | 0.60 | -0.20 | -2.00 | 3.00 | 1.05 | 1.08 | 0.92 | 0.18 | -0.01 | -0.20 | 0.06 | 0.91 | 1.03 | -0.02 |
| M_{167} | m_{167} | 0.60 | 0.40 | 0.20 | 3.00 | -2.00 | 1.06 | 1.06 | 0.93 | 0.20 | -0.02 | -0.21 | 0.05 | 0.89 | 1.04 | 0.00 |
| M_{168} | m_{168} | 0.80 | 0.20 | 0.60 | 1.33 | -0.33 | 1.06 | 1.07 | 0.94 | 0.20 | -0.03 | -0.21 | 0.04 | 0.90 | 1.05 | -0.01 |