All of our work is done in the individual marketplace. We investigated all companies that have above 2000 member months in the individual marketplace in both 2014 and 2015 who have data in 2016. The companies that exited the market in 2016 are excluded in the analysis because they are missing data (since they exited). Risk transfers per member month are calculated by dividing a company’s risk transfers by their member months in a given year. They are positive if the company is receiving money from other companies (making money), and they are negative when companies are paying money to other companies (losing money). Loss per member month is calculated for each company by adding premium per member month, reinsurance per member month, and risk transfers per member month and subtracting costs per member month. Premium per member month is calculated by dividing a company’s total direct premium written by their member months in a given year. Reinsurance per member month is calculated by dividing a company’s total reinsurance by their member months in a given year. Costs per member month are calculated by dividing a company’s total costs by their member months in a given year. Reinsurance, Premium, and Costs are all positive values.

All of the below correlations are done in R with the glm method, which uses the iteratively reweighted least squares method in calculating regression coefficients. Additionally, all of the below values are per member month, even if not explicitly stated. Analyses 1, 2, and 4 have n=293 and analysis 3 has n=374.

1. We found that when risk transfers in 2016 were linearly regressed with loss in 2014 and risk transfers in 2015, that Risk Transfers Per Member Month 2016 ~ -0.154 Total Loss Per Member Month 2014 + 1.16592 Risk Transfers Per Member Month 2015 + C1. Both coefficients (for 2014 loss and 2015 transfers) were significant.
2. When risk transfers in 2016 were regressed with loss in 2014 and transfers in 2014, we found that Risk Transfers Per Member Month 2016 ~ -0.33178 Total Loss Per Member Month 2014 + 1.11954 Risk Transfers Per Member Month 2014 + C2. Both correlations were significant, which illustrates that premiums and costs in 2014 may predict more transfers in 2016, even after adjusting for the transfers in 2014.
3. When risk transfers in 2015 were regressed with loss in 2014 and transfers in 2014, only the coefficient for transfers was significant and had a coefficient of around 0.9; the loss coefficient was around around 0.02. This result is likely skewed because our sample is based on those companies who were still in the market in 2016, but it is still interesting to note that the transfers are 2014 and 2015 still had a 0.9 coefficient.
4. When risk transfers in 2016 were regressed with loss in 2015 and transfers in 2015, both coefficients were significant. Specifically, Risk Transfers Per Member Month in 2016 ~ -0.12078 Total Loss Per Member Month 2015 + 1.16283 Risk Transfers Per Member Month 2015.

Overall, it is interesting that loss in both 2015 and 2014 has a negative coefficient (-0.154 in 1, -0.332 in 2, -0.121 in 4) when transfers in 2016 is the dependent variable, even when the loss is adjusted for transfers in the same year. It is also interesting that transfers between years have coefficients around 1 (1.16 in 1, 1.120 in 2, 0.9 in 3, 1.163 in 4). This could indicate that if a company is losing money, it is more likely to continue getting the same amount of transfers and keep losing money in the future.