

# EMPIRICALLY IDENTIFIED INDUSTRY CLASSIFICATION

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## ABSTRACT

This paper models a market with firms that invest in one or more categories of assets. Firms that invest in assets with similar return correlations are grouped into categories that are comparable to industry groups in the standard scheme of classifying firms into industries based on offering a common product or service. Because these categories are based on objective (correlation) rather than subjective (common product) criteria, use of these categories by investors might have advantages when using industry information to make investment decisions and construct portfolios.

Prior research examining the diversification discount has come to several conflicting conclusions. I contend this conflict is the result of sample selection and how diversification is measured. I introduce a new measure of diversification level based on the correlations between industry and firm returns and re-examine whether differential pricing exists across firm diversification levels in the time period of 1973-2013. I find an unconditional diversification premium. However, there is substantial time series variation in the relation between diversification and valuation. This variation is able to reconcile many of the conflicting conclusions in the prior literature.

Finally, I provide empirical tests to determine whether industry returns series can be improved upon through creating a new industry return series by empirically identifying which firms should be included in an industry. I employ an iterative method of calculating industry level returns and report statistics on the pros and cons of those returns. Overall I provide evidence that an empirical identification of industry level returns is beneficial.