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# Financial constraints and investment efficiency: Internal capital allocation across the business cycle

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## ABSTRACT

The extent to which conglomerates face frictions in external capital markets has implications for their internal capital allocation. We find that, during recessions, when external financing costs are higher, conglomerates improve the efficiency of internal capital markets by increasing the allocation of funds to high  $q$  divisions relative to low  $q$  divisions. The improvement is significantly higher for conglomerates that are likely to face more binding financial constraints. This evidence suggests that although financial constraints impair managers' ability to undertake positive net present value projects, they improve the quality of project selection by reducing free cash flow and pressuring managers to fund the more valuable investment opportunities. It is consistent with theories stressing the benefits of internal capital markets in the presence of external capital market imperfections.

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## 1. Introduction

Unlike focused firms, conglomerates have internal capital markets, which give them the opportunity to transfer a given amount of capital between segments avoiding the frictions in external capital markets. Such financial flexibility can be beneficial or detrimental to a firm's investment efficiency. A potential efficiency-enhancing benefit of capital transfers is the possibility to finance profitable investment projects that may not get financed through external capital markets due to information asymmetries (Myers and Majluf, 1984; Greenwald et al., 1984) or agency problems (Jensen and Meckling, 1976; Grossman and Hart, 1982; Jensen, 1986). This line of argument, proposed by Alchian (1969) and Weston (1970), has been further developed by Williamson (1975), Gertner et al. (1994), and Fluck and Lynch (1999). However, the flexibility to redistribute funds may also lead to overinvestment in poor projects

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at the expense of good ones due to various agency problems described in the previous literature (Scharfstein and Stein, 2000; Rajan et al., 2000).

In this paper, we examine whether a firm's capacity to raise financing affects how efficiently it distributes the available capital between alternative investment projects. We argue that, other things equal, capital is likely to be allocated more efficiently when it is more difficult to obtain.

Easy access to external capital and free cash flow are expected to aggravate the allocation inefficiencies that exist within the conglomerate structure by facilitating investment spending. When managers are not pressed to set priorities or invest time in project selection, they are more likely to invest in positive net present value (NPV) projects, as well as negative NPV projects that are of special interest to them (Jensen, 1986; Stulz, 1990). This can lead to lower efficiency of internal capital markets. As shown theoretically by Matsusaka and Nanda (2002), at some level of resources when all desired projects can be funded, the agency costs of overinvestment may dominate the value of the real option to reallocate funds.

Financial constraints restrict the amount of capital under managers' discretion and restrain them from pursuing investment opportunities. This impairs their ability to undertake positive NPV projects. However, to the extent managers' private benefits are correlated with the profitability of investments, financial constraints can also lead to higher standards of project selection and more efficient internal capital markets. Specifically, managers can selectively alleviate the negative impact of financial constraints on higher value projects by increasing their priority in financing. Given a limited amount of capital, they can use the flexibility provided by internal capital markets to reallocate funds from lower quality projects to higher quality projects, which has been formalized as "winner-picking" and "loser-sticking" by Stein (1997). While financial pressure may benefit some conglomerates by reducing overinvestment, it may hurt other conglomerates by creating underinvestment. However, under both scenarios, it is expected that the allocation of capital to projects with lower marginal values will decrease relative to projects with higher marginal values, which will lead to more efficient internal capital markets.

To test the empirical relationship between financial constraints and internal capital markets, we study a sample of multidivisional firms between 1980 and 2008. Using segment-level data we examine their internal capital allocation policies in financially constrained versus financially relaxed states. Based on our main hypothesis, conglomerates are expected to increase the allocation of capital to their high  $q$  segments relative to low  $q$  segments when they face tighter financial constraints.

The severity of financial constraints faced by a firm is to some extent endogenous with respect to its investment policies. For example, inefficient internal capital allocation and high potential of overinvestment may lead to higher costs of external financing. However, this possibility is expected to lead to a negative relationship between internal capital market efficiency and financial constraints and, therefore, will contribute negatively to finding support for the advanced hypothesis. Also, to further mitigate this problem, we identify financially constrained states based on recessions and monetary contractions, which represent adverse liquidity shocks that are exogenous with respect to firms' investment policies.

A number of studies show that firms face significantly tighter financial constraints during recessions and monetary contractions due to the erosion of their balance sheets and the reduced supply of bank financing (Bernanke and Blinder, 1988; Bernanke and Gertler, 1995; Bernanke et al., 1996). Consistent with this view, we find that the conglomerates in our sample are significantly more constrained during recessions than non-recession periods. In particular, during recessions, they experience a substantial decline in the growth rates of capital expenditures, inventory, assets, and sales. Also, their sensitivity of investment to internally generated cash flows is significantly higher compared to that in non-recession periods. The decline in investment, accompanied by higher dependence on internal funds, suggests that even if the demand for growth may be lower in recessions, it is constrained by the availability of capital.

However, while under financial constraints, conglomerates do not equalize the impact of the liquidity shortfalls across segments. Instead, they use their internal capital markets to save the budgets of their higher growth investment projects. Based on a firm-adjusted measure of capital allocation, during non-recession periods, high  $q$  divisions receive significantly more financing compared to low  $q$  divisions, which is not surprising considering the differences in industry growth

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