“Why Does an Acquiring Firm’s Cash Reserve Have a Negative Wealth Effect: Agency or Overvaluation?” Sole Principal Investigator (PI). Funding body: ESRC; Total amount: £194,043.01; duration: 2009–2011.

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ESRC End of Award Report

For awards ending on or after 1 November 2009

This End of Award Report should be completed and submitted using the **grant reference** as the email subject, to **reportsofficer@esrc.ac.uk** on or before the due date.

The final instalment of the grant will not be paid until an End of Award Report is completed in full and accepted by ESRC.

Grant holders whose End of Award Report is overdue or incomplete will not be eligible for further ESRC funding until the Report is accepted. ESRC reserves the right to recover a sum of the expenditure incurred on the grant if the End of Award Report is overdue. (Please see Section 5 of the ESRC Research Funding Guide for details.)

Please refer to the Guidance notes when completing this End of Award Report.

<table>
<tr><td>Grant Reference</td><td colspan="4">RES-061-25-0225</td></tr>
<tr><td>Grant Title</td><td colspan="4">What Drives the Effects of Corporate Cash Reserve In Acquisitions: Agency or Information?</td></tr>
<tr><td>Grant Start Date</td><td>1 May, 2009</td><td colspan="2" rowspan="2">Total Amount Expended:</td><td rowspan="2">£ 234,468.60</td></tr>
<tr><td>Grant End Date</td><td>31 August, 2011</td></tr>
<tr><td>Grant holding Institution</td><td colspan="4">The University of Manchester</td></tr>
<tr><td>Grant Holder</td><td colspan="4">Ning Gao</td></tr>
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<tr><td colspan="2">Co-Investigators (as per project application):</td><td colspan="3">Institution</td></tr>
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1. Non-technical summary

Please provide below a project summary written in non-technical language. The summary may be used by ESRC to publicise your work and should explain the aims and findings of the project.
[Max 250 words]

This project provides important new insights into the costs and benefits of reserving cash within a company. Companies accumulated massive cash reserves in the past two decades. At the end of 2010, US companies alone hold more than ten trillion dollars of cash. A good understanding of the pros and cons of holding cash therefore is particularly relevant.

After careful analysis, the author concludes that cash reserve has an adverse selection effect. Specifically, if investors know a company does not have to issue (shares) to invest, an attempt to do so sends a strong signal of overvaluation. The adverse selection effect is particularly relevant when company investments rely on stock financing. A high cash reserve leads new investors to suspect the company's shares are overvalued and request a higher share of the company for the same amount of investment. The adverse selection effect increases cost of external equity and induces a cash-rich company to forego value-enhancing investments.

The author also analyzes the benefits for bidders to reserve cash. He finds that cash-rich bidders in UK have better announcement returns than cash-poor ones during 1984–2007, contrasting previous findings in the US. The positive cash reserve effect is mainly from bidders of high long-run growth or those with nontrivial institutional holdings. He concludes that bidders reserve cash in order to be better positioned to capture growth opportunities arising from acquisitions. It also suggests that strong shareholder power in UK is important to ensure cash reserved in the interests of shareholders.

2. Project overview

a) Objectives

Please state the aims and objectives of your project as outlined in your proposal to the ESRC.
[Max 200 words]

This study aims to empirically analyse and distinguish between two theories (henceforth termed agency theory and overvaluation theory) that analyse the role of corporate cash reserve in determining both takeovers and the acquiring firm's (or the acquirer's) announcement return.

These two theories have contrasting implications for the benefits and costs of holding cash within the bidding company.

b) Project Changes

Please describe any changes made to the original aims and objectives, and confirm that these were agreed with the ESRC. Please also detail any changes to the grant holder's institutional affiliation, project staffing or funding. *[Max 200 words]*

No change.

c) Methodology

Please describe the methodology that you employed in the project. Please also note any ethical issues that arose during the course of the work, the effects of this and any action taken. *[Max 500 words]*

We include three outputs for this project, each analyzing a different sample. We cover acquisitions announced in both UK and the US. Our analysis uses both cross-sectional and panel data.

We use event study methodology to analyze bidder announcement cumulative abnormal returns (*CARs*). To examine the relation between bidder cash reserve and bidder *CAR*, we use regressions controlling for other factors that affect bidder *CAR*. For our predicting bidder analysis, we use logistic regressions adjusted for heteroskedasticity and within-year clustering. In our post-acquisition operating performance analysis, we use an improved version of the method by Healy, Palepu, and Ruback (1992). In particular, we first adjust company operating performance by the median performance of companies in the same industry, size decile and operating performance decile (see Powell and Stark, 2005). We then regress the adjusted post-acquisition operating performance of the combined company on pre-acquisition value-weighted bidder and target adjusted operating performance. The intercept captures the abnormal operating performance attributable to the acquisition. To examine post-acquisition uses of funds, we employ the method of Hertzel and Li (2009) and Kim and Weisbach (2006). This method tracks 5 accounting variables in post-acquisition years, and examines how bidder cash reserve affects funds used on inventory, research and development, acquisitions, capital expenditure, and reduction of long-term debt in each of the 4 years after acquisitions. As is true with all samples of acquisitions, our sample is subject to self-selection bias because company characteristics may affect both the choice of being a bidder and bidder announcement returns. We use the methods of Heckman (1979) and Eckbo, Maksimovic, and Williams (1990) to address the self-selection issue.

d) Project Findings

Please summarise the findings of the project, referring where appropriate to outputs recorded on the ESRC website. Any future research plans should also be identified. *[Max 500 words]*

We include three papers for output.

"The adverse selection effect of corporate cash reserve: evidence from acquisitions solely financed by stock".

We find that corporate cash reserve has an adverse selection effect. Specifically, if investors know a company does not have to issue to invest, an attempt to do so sends a strong signal of overvaluation. Using a sample of acquisitions solely financed by stock to exclude the potential complications of free cash flow, we find that a cash-rich bidder has lower announcement returns. This effect is stronger in hot-equity-market years or when a bidder has higher value uncertainty. We also find targets request cash payment to remove "lemon" bidders in normal (non-hot-equity-market) years, but accept too many stock offers in hot-equity-market years. After acquisitions, cash-rich bidders operationally outperform cash-poor bidders. Further, they spend more funds on reducing debt but not more on investments, compared with cash-poor bidders. Combined, these results show that cash reserve has information costs. Further, they highlight the importance of the two-sided information asymmetry framework of Rhodes-Kropf and Viswanathan (2004) in describing merger outcomes without resorting to behavioural or agency explanations.

"Bidder cash reserve effect under the precautionary motive: evidence from UK".

We find that cash-rich UK bidders have better announcement returns than cash-poor ones during 1984–2007, contrasting findings in the US. The positive cash reserve effect is mainly from bidders of high long-run growth or those with non-trivial institutional holdings. Moreover, cash-rich bidders' post-acquisition operating performance is positively related to bidder cash reserve and institutional holdings. Our results suggest that the precautionary motive drives bidder cash reserve effects. Specifically, cash-rich bidders are better positioned to capture growth opportunities arising from acquisitions. Our results also suggest that strong shareholder power is necessary to ensure cash reserved in the interests of shareholders.

"What drives bidder cash reserve effects in acquisitions: agency conflicts or precautionary motive?"

We find, in the US, cash-rich companies are less likely to be bidders during 1994-2008, contrasting previous findings for earlier period. This is driven by companies having high residual market-to-book ratios (i.e. the residual of actual market-to-book ratio regressed on measures of the strength of agency conflicts). Bidder returns at deal announcement decreases with bidder cash reserve. The negative announcement effect is stronger for bidders of lower asset-tangibility, but insensitive to the strength of agency conflicts. Post acquisition, cash-rich bidders spend more funds on debt reduction, capital expenditure, but less on further acquisitions. Moreover, cash-rich bidders have better operating performance when they have high residual market-to-book ratios. Our evidences of bidder cash reserve effects are more consistent with the precautionary motive than the agency theory. High cash reserve, to a large extent, indicates growth and overvaluation rather than agency conflicts.

For further research, we will examine whether cash-rich bidders return cash to shareholders after cancelled deals. It will further shed light on the motives of reserving cash. We expect that companies with limited growth but effective governance return more cash to shareholders than companies of high-growth or without effective governance arrangement.

e) Contributions to wider ESRC initiatives (eg Research Programmes or Networks)

If your project was part of a wider ESRC initiative, please describe your contributions to the initiative's objectives and activities and note any effect on your project resulting from participation. *[Max. 200 words]*

3. Early and anticipated impacts

a) Summary of Impacts to date

Please summarise any impacts of the project to date, referring where appropriate to associated outputs recorded on the ESRC website. This should include both scientific impacts (relevant to the academic community) and economic and societal impacts (relevant to broader society). The impact can be relevant to any organisation, community or individual. *[Max. 400 words]*

Scientific impacts:

The paper—"The adverse selection effect of corporate cash reserve: evidence from acquisitions solely financed by stock"— has been published in the Journal of Corporate Finance 17 (year 2011), 789-808.

The paper —"Bidder cash reserve effect under the precautionary motive: evidence from UK"— has been accepted by several peer-reviewed conferences, for example, the European Financial Management Association (EFMA) 2011 annual conference and British Accounting and Finance Association Northern Area Group 2011 Annual Conference.

b) Anticipated/Potential Future Impacts

Please outline any anticipated or potential impacts (scientific or economic and societal) that you believe your project might have in future. *[Max. 200 words]*

Scientific impact:

We expect the two working papers will be published with reputable academic journals in the next few years.

Economic and social impacts:

Corporate cash reserve is more of a private-sector decision than a government decision. We expect our arguments on the costs and benefits of cash reserve to be further disseminated through various media to shareholders and company managers, and influence their investment decisions.

You will be asked to complete an ESRC Impact Report 12 months after the end date of your award. The Impact Report will ask for details of any impacts that have arisen since the completion of the End of Award Report.

4. Declarations

Please ensure that sections A, B and C below are completed and signed by the appropriate individuals. The End of Award Report will not be accepted unless all sections are signed. Please note hard copies are NOT required; electronic signatures are accepted and should be used.

A: To be completed by Grant Holder

Please read the following statements. Tick ONE statement under ii) and iii), then sign with an electronic signature at the end of the section (this should be an image of your actual signature).

i) The Project

This Report is an accurate overview of the project, its findings and impacts. All co-investigators named in the proposal to ESRC or appointed subsequently have seen and approved the Report.	☒

ii) Submissions to the ESRC website (research catalogue)

Output and impact information has been submitted to the ESRC website. Details of any future outputs and impacts will be submitted as soon as they become available.	☒
OR	
This grant has not yet produced any outputs or impacts. Details of any future outputs and impacts will be submitted to the ESRC website as soon as they become available.	☐
OR	
This grant is not listed on the ESRC website.	☐

iii) Submission of Datasets

Datasets arising from this grant have been offered for deposit with the Economic and Social Data Service.	☐
OR	

Datasets that were anticipated in the grant proposal have not been produced and the Economic and Social Data Service has been notified. **OR** No datasets were proposed or produced from this grant.	☐ ☒

Signature:

Name: **Ning Gao** **Date: 20 Nov., 2011**

B: To be completed by Head of Department, School or Faculty

Please read the statement below then sign with an electronic signature to confirm your agreement.

This Report is an accurate overview of the project, its findings and impacts.

Signature: Andrew W Stark

Name: **Andrew W Stark**

Position: **Head, Manchester Accounting & Finance Group Date: 24.11.2011**

C: To be completed by Finance Officer of Grant-Holding Research Organisation

Please read the statement below then sign with an electronic signature to confirm your agreement.

ESRC funds have been used in accordance with the ESRC Research Funding Guide. All co-investigators named in the proposal to ESRC or appointed subsequently have seen and approved the Report.

Signature: C.A. Pacey

Name: Catherine Pacey

Position: Research Accountant **Date: 25th November 2011**