Does capital market structure affect farm investment? A comparison using French and British farm level panel data

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Introduction

A substantial body of recent empirical research now supports the view that, contrary to the Modigliani-Miller theorem (1958), internally generated and external funds are not perfect substitutes for financing investment. Much of this evidence comes from microeconometric studies of investment (Fazzari, Hubbard and Petersen, 1988; Whited, 1992; Schaller, 1993; Faroque and Ton-That, 1995; Bond and Meghir, 1995) which show that firm level investment is 'excessively sensitive' to financial variables reflecting, e.g.cash flow, debt than should be the case if the firms' investment decisions were actually independent of its financing decisions (as Modigliani-Miller implies). Theoretically, the property of excess sensitivity of investment is consistent with the view that, due to the presence of aysmmetric information (Stiglitz and Weiss, 1981), borrowers face various types of financial constraints and transactions costs in credit markets.

For EU agriculture, the presence of such constraints or costs not only raises questions about the effect of differential access to credit at the individual farm level, but also what impact the differences in the structure of agricultural capital markets across member states may have on farm investment. Historically, there have been some significant differences in the nature of the lenders in the various member states. For example, while in continental countries such as France, Farmer Co-operative Banks have traditionally provided the vast majority of funds for agriculture, i.e. Crédit Agricole, in the UK agricultural lending has been dominated by the commercial banks. Further, perhaps in part as a result of these institutional differences, credit terms and conditions also vary significantly across the countries. Principally substantial differences exist as to the type of loan contract available in the two countries, In France, finance for farmers' new long term investment is typically only available in the form of long-term loans (Lefèvre 1995). In contrast, in the UK traditionally overdraft financing has been available to farmers to satisfy both short and long term financing such that many UK farmers have come to regard bank overdrafts as a 'continuously renewable facility' (Hill and Seagrave 1987).

In principle, depending upon the way in which the overdraft limit is determined, this form of borrowing can be seen to be very much more flexible than long-term loans, with for example, in bad years, lenders more willing to defer interest and simply add it to the debt. Further, the existence of a permanent maximum borrowing limit allows farmers to re-invest without having to re-apply for a new loan from the bank. This latter observation suggests that the transaction costs associated with long-term borrowing are likely to be greater than those for overdrafts. This may arise as every application in the former case may require (potentially) costly verification of the current financial status of the farm.

The principal aim of this paper is therefore to explore whether such potential differences have an observable impact upon farm investment behaviour in the two countries. Specifically, this is investigated by considering the impact of a sample selection rule on econometrically estimated farm level investment functions using panel data constructed from the French and English-Welsh farm business surveys. The selection rule used here (as in Bond and Meghir (1995)) is consistent with a dynamic theory of the firm under uncertainty which allows for transaction costs (in new borrowing).

While the data derived from the English-Welsh and French farm business surveys are compatible, differences remain regarding the period for which information is available. As a result, the estimations on the French farms were based on a balanced panel for the period 1987-92 while the panel for the British farms (at present) only covers the period 1989-92. Finally, the econometric problems which arise in the estimation of farm level investment functions due to the influence of unobserved farm specific effects and the use of lagged endogenous variables are controlled for in the analysis by the use of GMM estimation methods.

The plan of the paper is as follows. In the next section the dynamic model of the farm firm under uncertainty is presented and its empirical implications explained. Section 3 describes the two datasets in more detail while the empirical results are presented in section 4. Section 5 concludes.

Model

It is assumed that each farm household chooses its current decision variable values in order to maximize the expected weighted sum of private drawings from the farm business, i.e. the farm's 'dividend payments' to the farm household. This is a primitive form of the traditional profit maximizing objective function as, if the weights are the discount factors and the capital market is perfect, then this is simply equivalent to maximizing the expected net present value of farm profits. This maximization is restricted by a number of equality and inequality as follows:

$$\max E_t\left(\sum_{\tau=t}^{T} \theta'_\tau C_\tau\right) \qquad [1]$$

$$C_\tau = \pi_\tau(K_\tau, L_\tau, I_\tau, A_\tau) - r_{\tau-1} d_{\tau-1} + b_\tau - g(b_\tau) - a_\tau$$

$$C_\tau \geq \overline{C}_\tau$$

$$K_\tau = (1-\delta)K_{\tau-1} + I_\tau$$

$$d_\tau = d_{\tau-1} + b_\tau - a_\tau$$

$$a_\tau \geq \overline{a}_\tau$$

$$b_\tau \geq 0$$

$$d_T \leq 0$$

$$d_{t-1} = \overline{d}_{t-1}$$

$$K_{t-1} = \overline{K}_{t-1}$$

where E_t-represents expectation at time t, θ_t- exogenous weights, C_τ- private drawings, $\pi_\tau(.)$- net revenue function, K_τ- capital stock beginning of period , L_τ- vector of current inputs, I_τ- investment, A_τ- vector of fixed factors, r_τ- interest rate, $d_{\tau-1}$- existing debt beginning of period , b_τ- new borrowing, a_τ- repayments, $\overline{C}_\tau$- minimum private drawings (exogenously determined by the farm household), and δ - the depreciation rate.

The first set of constraints define private drawings in each period as net revenue minus interest payments on debt plus new borrowings minus repayment on existing debt minus costs associated with new borrowing. The second set of inequality constraints define the minimum permissible levels for private drawings for each period $\overline{C}_\tau$. These are taken to reflect the farm households requirements or preferences for current private drawings. The third set of constraints define current capital stock K_τ as the depreciated value of the previous period's stock plus new investment (additions to the capital stock are instantaneous), while the next period's debt level d_τ is defined as the debt level at the beginning of the current period plus new borrowing minus repayments on existing debt by the fourth set of constraints. Finally, to account for the loan repayments, exogenous minimum levels are set by the lending institution $\overline{a}_\tau$. While this cuts the link which exists in practice between minimum repayments and the farm's debt structure, it can be shown that the model results are insensitive to this simplifying assumption and hence its inclusion.

The production possibilities facing the farm are incorporated with the inclusion of the net revenue functions $\pi_\tau(K_t, L_\tau, I_\tau, A_\tau)$ in the definition of private drawings. As well as incorporating the standard production relationship between inputs and outputs, this general specification also allows for adjustment costs in investment.

The transactions costs in the model are incorporated by including the cost function associated with new borrowings $g(.)$. This function represents explicit costs, e.g. loan arrangement fees, commission charges etc., and implicit costs, e.g. costs of verification of financial status. Its form will depend upon the nature of the extra costs associated with new borrowing. In the French context, the main agricultural lender, the Credit Agricole, charges a commission proportional to the amount of new borrowing (Lefèbre, 1997). Therefore, for simplicity it will be assumed here that the all explicit and implicit costs simply increase linearly with the level of borrowing, i.e. $g(b_\tau) = \alpha b_\tau$ [i].

The farmer's problem for time t can be rewritten as the following dynamic programming problem with state variables K_{t-1}, d_{t-1} and $\overline{a}_t$.

$$V_t(K_{t-1}, d_{t-1}, \overline{a}_t) = \max \begin{Bmatrix} \pi_t((1-\delta)K_{t-1} + I_t, L_t, I_t, A_t) - r_{t-1}d_{t-1} + b_t - \alpha b_t - a_t \\ +\theta_t E_t\left[V_{t+1}((1-\delta)K_{t-1} + I_t, d_{t-1} + b_t - a_t, \overline{a}_{t+1})\right] \end{Bmatrix} \quad [2]$$

s.t.

$$\pi_t((1-\delta)K_{t-1}+I_t,L_t,I_t,A_t)-r_{t-1}d_{t-1}+b_t-\alpha b_t-a_t\geq\overline{C}_t$$

$$a_t\geq\overline{a}_t$$

$$b_t\geq 0$$

This reformulation is helpful in deriving the Euler equation for investment but also illustrates more clearly the assumed information structure in the model. Thus, at the beginning of each period it is assumed all t dated variables are nonstochastic, while all future values are unknown and uncertain.

For solution purposes define μ_t, φ_t and λ_t as the lagrangian multipliers on the minimum private drawing constraint, the minimum repayment constraint, and the nonnegativity constraint on new borrowing respectively. Then it is possible to derive from the first order conditions and the envelope theorem the following Euler equation for investment :

$$-\theta_t(1-\delta)E_t\left[(1+\mu_{t+1})\frac{\partial\pi_{t+1}}{\partial I_{t+1}}\right]=-(1+\mu_t)\frac{\partial\pi_t}{\partial I_t}-(1+\mu_t)\frac{\partial\pi_t}{\partial K_t} \qquad [3]$$

while the following condition holds between the values of the lagrangian variables :

$$(1+\mu_t)(1-\alpha)+\lambda_t=\theta_tE_t\left[(1+\mu_{t+1})(1+r_t-\alpha)+\lambda_{t+1}\right] \qquad [4]$$

From equations [3] and [4] it follows that both the minimum private drawings constraints and the transactions costs for new borrowing must be present for the financing decision to impact upon the Euler equation for investment. These two equations form the basis of the method of econometrically testing the model.

Testing strategy and econometric specification

In order to use equations [3] and [4] rational expectations must be assumed. Hence, while [3] and [4] hold *ex ante* equivalent equations, or a combination of these equations are assumed to hold *ex post* with the addition of a suitably defined error term (or forecast error) (Hayashi, 1985).

Direct estimation of the model with transactions costs is not possible due to the presence of the unobservable lagrangian multipliers in equation [3]. Hence, in general, no single empirical Euler equation for investment is applicable. However, if the farm borrows in consecutive periods a single empirical Euler equation is produced. This follows from the first order conditions with which imply that if $b_t>0$ and $b_{t+1}>0$ then, assuming rational expectations, one can derive the following equation (Benjamin and Phimister 1997):

$$-(1-\delta)\frac{\partial\pi_{t+1}}{\partial I_{t+1}}=-\left(\frac{1+r_t-\alpha}{1-\alpha}\right)\frac{\partial\pi_t}{\partial I_t}-\left(\frac{1+r_t-\alpha}{1-\alpha}\right)\frac{\partial\pi_t}{\partial K_t}+v_{0t+1} \qquad [6]$$

Being conditional on $b_t > 0$ and $b_{t+1} > 0$, this equation cannot be applied in isolation as the error v_{0t+1} will not have a zero mean. Hence, formally the cases when the condition $b_t > 0$ and $b_{t+1} > 0$ is not satisfied must be also be incorporated. As the unobservable lagrangian values will be functions of the state and other exogenous variables in the model, one approach is to proxy for the effect of these variables using some arbitrary function, $h(.)$, of a vector of state and other exogenous variables $\underline{Z}$. Under these conditions the empirical Euler equation for the model of investment with transactions costs can be approximated by:

$$-(1-\delta)\frac{\partial \pi_{t+1}}{\partial I_{t+1}} = \begin{cases} -\left(\frac{1+r_t-\alpha}{1-\alpha}\right)\frac{\partial \pi_t}{\partial I_t} - \left(\frac{1+r_t-\alpha}{1-\alpha}\right)\frac{\partial \pi_t}{\partial K_t} + v_{0t+1} & \text{if } b_t > 0,\ b_{t+1} > 0 \\ -m_1\frac{\partial \pi_t}{\partial I_t} - m_2\frac{\partial \pi_t}{\partial K_t} + h(\underline{Z}) + v_{1t+1} & \text{otherwise} \end{cases} \quad [7]$$

where m_1 and m_2 are arbitrary constants. Equation [7] forms the basis for the parameterized specifications which are to be estimated.

The econometric specification of the model of investment is obtained by defining the net revenue function as

$$\pi_t = p_t F(K_t, L_t, A_t) - p_t G(I_t, K_t) - w_t L_t - p_t^I I_t \quad [8]$$

where p_t is output price, $F(K_t, L_t, A_t)$ is a constant returns to scale Cobb Douglas production function ($F(K_t, L_t, A_t) = dK_t^{\gamma_1} L_t^{\gamma_2} A_t^{1-\gamma_1-\gamma_2}$,), the function $G(I_t, K_t) = bK_t(I_t/K_t - c)^2$ is the (linearly homogenous) adjustment cost function, w_t is the vector of prices for the variable inputs and p_t^I is the price of investment goods. Let $Y = F - G$ be the value of net (observable) output. As a result of the assumptions concerning the production and adjustment cost functions, it follows that the net output function $Y(K_t, L_t, A_t)$ is also linearly homogenous. Then, from equation [7] estimating equation for the group with $b_t > 0$ and $b_{t+1} > 0$ can be written as

$$\left(\frac{I}{K}\right)_{it+1} = c(1-\phi_{t+1}) + c(1+\phi_{t+1})\left(\frac{I}{K}\right)_t - \phi_{t+1}\left(\frac{I}{K}\right)_t^2 - \frac{\gamma_1}{b}\phi_{t+1}\left(\frac{Y}{K}\right)_t + \frac{\phi_{t+1}}{b}Q_t + u_{t+1} \quad [9]$$

where $\phi_{t+1} = (p_t/p_{t+1})(1+r_t+\alpha/1-\delta)$, $Q_t = \frac{1}{p_t}\left(\frac{(r_t+\alpha)p_t^I + (p_t^I - p_{t+1}^I) + \delta p_{t+1}^I}{1+r_t+\alpha}\right)$, and u_{t+1} is a composite error term. The term Q_t is equivalent to the user cost of capital with the numerator equal to the interest and transaction cost plus capital loss plus depreciation cost of investment. Instead of attempting to estimate Q_t directly, the time varying affects from this parameter are assumed to be captured by time specific and individual farm effects (Bond and Meghir). Hence, the basic estimable equation for both cases is;

$$\left(\frac{I}{K}\right)_{i,t+1} = \beta_1\left(\frac{I}{K}\right)_{i,t} + \beta_2\left(\frac{I}{K}\right)^2_{i,t} + \beta_3\left(\frac{Y}{K}\right)_{i,t} + \rho_i + \sigma_{t+1} + v_{it+1} \qquad [10]$$

where ρ_i refer to the farm specific effect , σ_{t+1} is the time-specific effect. Further, it can be shown that, for both cases, the parameters values are restricted such that $\beta_1 > 0$, $\beta_2 < -1$ and $\beta_3 < 0$.

Data and Estimation

The two balanced panels are derived from the English-Welsh and French farm business surveys for the years 1989-1992 and 1987-1992 respectively. Table 1 summarizes a number of selected variables for the sample farms in the two countries over the period including the variables used in the econometric analysis. One major advantage of these datasets is that - in principle at least - their use by the European Commission has led to the development of consistent definitions across countries. Capital is defined as the value of machinery, buildings, breeding stock and other stock where each component was deflated by the appropriate price index (EU Commission 1996). Investment is defined in an analogous manner, while farm output is gross enterprise output deflated by the appropriate national output price index, (EU Commission 1996) and income is occupiers income value also deflated by the national output price index. The difference in structure of borrowings is clearly seen from Table 1 with the dominance of short term loans in the English-Welsh sample contrasting with the French case where long term loans dominate.

(Table 1)

The estimation of equation [10] is complicated by the fact that the lagged values of the dependent variable are correlated with the farm effect. Thus, the standard fixed effects estimator - obtained by applying OLS after transforming all values into deviations from the appropriate mean value- is inconsistent because the transformation induces a correlation between the lagged dependent variable and the error (Balgati, 1995). Following Arellano and Bond (1991), this problem may be overcome by taking first differences of equation [6] to remove the fixed effects and then estimating the parameters by Generalised Method of Moments (GMM) where the instrument set contains the independent variables plus the dependent variable lagged two or more periods.

For all specifications, below the coefficients the value of standard errors are reported which are asymptotically robust to heteroscedasticity. Furthermore, for each estimation the Sargan test for over-identifying restrictions is also presented. This statistic is a test of whether the sample moments, corresponding to the restrictions imposed by the GMM orthogonality conditions, are sufficiently close to zero. Under the maintained hypothesis of validity of instruments it is a general test of the specification of the model. Under the null of a valid model the Sargan statistic has a χ^2 distribution (with the degrees of freedom equal to the number of over-identifying restrictions).

Results

The main focus of the paper is the question of whether the use of long term loans in the French context is consistent with larger transactions costs than the use of overdraft finance in the UK context. Equation [7] and its empirical counterparts can be used to address this by testing whether they form the basis for an acceptable empirical specification under various hypotheses concerning which type of loans attract transactions costs.

Tables 2 and 3 present the results based around the empirical Euler equation for investment in the presence of transactions costs for France and England and Wales. In this case, it is assumed that the transactions are associated with long term loans only. Thus, a dummy variable d_{it} is defined which is zero when the farm i has new long term borrowings in consecutive periods (in period t+1 and in period t) and one otherwise. This dummy is interacted with the independent variables to provide a formulation which allows the parameters of the model to differ across farms in the two subsamples. Further, as the dummy variable is endogenous in the model all the interaction terms are also instrumented.

(Tables 2 and 3)

Specification I, which allows for the impact of financial variables for those farms without new borrowing only, can be interpreted as representing the direct estimation of equation [7] while specification II represents a more general model. In neither the French or the British case, is specification I rejected by the Sargan test. However, while - contrary previous work (Benjamin and Phimister, 1997) - the French results (at least weakly) do not reject the transactions costs model predictions, i.e. $\beta_1 > 0$, $\beta_2 < -1$ and $\beta_3 < 0$, in the British case the strongly significant and positive coefficient on the output/capital ratio suggests some misspecification problems. In this case the inclusion of financial variables for those farms with consecutive borrowings does not significantly improve the results. Nevertheless, the overall acceptability of the specifications based upon the sample selection rule[1] appears robust and merits further investigation.

In Table 4 the question of whether overdraft financing in the UK is associated with transactions costs is addressed - in an ad-hoc manner - by redefining the dummy

[1] Experiments with Euler equations without transactiosn costs were either rejected by the data (France) or had no significant estimated coefficients (England and Wales).

variable d_{it} so that it is now zero when the farm i has new long term borrowings in consecutive periods *or* the farm substantially increased short terms loans in consecutive periods. In specification III substantial is defined as at least a 5% increase in short borrowings in each period while for specification IV it is defined as a 10% increase. In this way, it is hoped to capture any costs incurred by a farmer when their overdraft limit is increased. That is, if the process of increasing one's overdraft limit by a relatively substantial amount also incurs transactions costs, e.g. associated with the verification of the farmer's financial status, then one would expect that the transaction cost model should also provide an adequate empirical model for this case.

(Table 4)

Somewhat surprisingly, in both cases the inclusion of 'substantial' changes in short-term loans destroys all the explanatory power of the general empirical transactions costs model with no individual coefficient now significant. Given the maintained hypotheses such rejections of the model must be interpreted with some case, however they are consistent with the interpretation that the transactions costs associated with upward changes in overdraft level are not as large as those for long-term loans. Further, given the evidence from tables 2 and 3 that long-terms loans are associated with transactions costs which affect investment behaviour, it is possible to tentatively conclude that the differing terms on which finance is available do have a significant impact on investment behaviour.

Conclusions

In this paper an investment model of the farm firm, allowing for adjustment costs in investment and transactions costs associated with new borrowing, has been constructed and estimated using panel data on French and British farms from the farm Business Surveys for France and England and Wales. The empirical models were used to attempt to determine whether the observed differences in the finance terms available had any appreciable impact upon farm investment behaviour.

While the maintained hypotheses implicit in the methodology used mean that all results must be interpreted with some caution, the results do suggest that, firstly, transaction costs associated with long term loans do affect investment behaviour in both countries and , secondly, that such effects are absent for short-term (overdraft) finance. Therefore, it is possible to tentatively conclude that the differing terms on which finance is available do appear to have significant differential impacts on investment in France and the England and Wales.

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Table 1: Means of Selected Variables

A. Means in England and Wales

N=811

	1987	1988	1989	1990	1991	1992
Investment /Capital *(I/K)*	0.171	0.179	0.165	0.140	0.135	0.151
(Investment/Capital)^2 $(I/K)^2$	0.057	0.058	0.051	0.042	0.040	0.048
Farm Output/Capital *(Y/K)*	3.494	3.749	3.616	3.548	4.109	5.022
Income/Capital *(C/K)*	0.671	0.755	0.569	0.291	0.519	1.050
Total Debt/Capital *(DT/K)*	1.918	1.903	1.912	2.168	2.478	2.720
(Short Term Debt/Total)	1.203	1.176	1.189	1.264	1.476	1.604
(Long Term Debt /Total)	0.715	0.727	0.722	0.904	1.001	1.116
New Borrowing Dummy 1 *(D)*	23	23	22	11	18	-
New Borrowing Dummy 2 *(D)*	217	220	213	163	139	-
New Borrowing Dummy 3 *(D)*	257	258	248	198	175	-
New Borrowing Dummy 4 *(D)*	296	302	300	246	223	-

New Borrowing Dummy 1 long term loans only in consecutive years

New Borrowing Dummy 2 long term loans + short term loans increase of over 10% in consecutive years

New Borrowing Dummy 3 long term loans + short term loans increase of over 5% in consecutive years

New Borrowing Dummy 4 long term loans + any short term loans increase in consecutive years

B. Means in France

	1987	1988	1989	1990	1991	1992
Investment /Capital *(I/K)*	0.192	0.204	0.203	0.215	0.186	0.167
(Investment/Capital)^2 $(I/K)^2$	0.085	0.094	0.094	0.312	0.089	0.076
Farm Output/Capital *(Y/K)*	4.39	4.739	5.261	6.004	7.977	7.614
Income/Capital *(C/K)*	1.51	1.603	2.401	2.381	2.79	2.525
Total Debt/Capital *(DT/K)*	2.36	2.302	2.410	2.406	2.834	2.114
(Short Term Debt/Total)	0.099	0.092	0.093	0.106	0.117	0.098
(Long Term Debt /Total)	2.16	2.210	2.308	2.300	2.721	2.016
New Borrowing Dummy *(D)*	421	304	272	266	227	-

* New Borrowing Dummy defined here for long term loans only

Table 2 Euler equation: transactions costs (France)

Dependent variable $I/K_{i,t+1}$ T=1987-1992, N=1471	Specification I	Specification II
$(I/K)_{i,t}$	0.993	0.998
	(0.570)	(0.404)
$(I/K)^2_{i,t}$	-0.722	-0.750
	(0.406)	(0.335)
$(Y/K)_{i,t}$	$-0.158.10^{-2}$	$-0.442.10^{-2}$
	$(0.212.10^{-2})$	$0.979.10^{-2})$
$(res/K)_{i,t}$		-0.016
		(0.021)
$(borr/K)_{i,t}$		0.0169
		(0.012)
$d_{i,t}(I/K)_{i,t}$	-1.269	-1.204
	(0.663)	(0.470)
$d_{i,t}(I/K)_{i,t}2$	0.8715	0.771
	(0.046)	(0.400)
$d_{i,t}(Y/K)_{i,t}$	-.36523	$-0.203.10^{-2}$
	$(0.722.10^{-2})$	(0.010)
$d_{it}(res/K)_{i,t}$	$0.550.10^{-2}$	-0.016
	$(0.84.10^{-2})$	(0.021)
$d_{it}(borr/K)_{i,t}$	-0.58910^{-3}	0.017
	$(0.693.10^{-2})$	(0.01)
Sargan	10.59	26.26
(degrees of freedom)	(16)	(28)
p value	0.83	0.56

Table 3 Euler equation: transactions costs (England and Wales)

Dependent variable $I/K_{i,t+1}$ T=1989-1992,	Specification I	Specification II
$(I/K)_{i,t}$	0.407	0.300
	(0.299)	(0.236)
$(I/K)^2_{i,t}$	-0.946	-0.911
	(0.440)	(0.337)
$(Y/K)_{i,t}$	0.108	0.076
	(0.047)	(0.036)
$(res/K)_{i,t}$		-0.056
		(0.092)
$(borr/K)_{i,t}$		0.038
		(0.036)
$d_{i,t}(I/K)_{i,t}$	-0.454	-0.368
	(0.288)	(0.231)
$d_{i,t}(I/K)_{i,t}{}^2$	0.926	0.899
	(0.438)	(0.332)
$d_{i,t}(Y/K)_{i,t}$	-0.010	0.010
	(0.013)	(0.014)
$d_{it}(res/K)_{i,t}$	0.010	0.085
	(0.066)	(0.065)
$d_{it}(borr/K)_{i,t}$	0.012	-0.058
	(0.040)	(0.028)
Sargan	11.81	15.48
(degrees of freedom)	(14)	(18)
p value	0.62	0.63

Table 4 Transactions costs and Short Tarm Loans England and Wales

Dependent variable $I/K_{i,t+1}$ T=1989-1992,	Specification III(5%)	Specification IV(10%)
$(I/K)_{i,t}$	0.0271	-0.011
	(0.077)	(0.090)
$(I/K)^2_{i,t}$	-0.014	-0.054
	(0.095)	(0.115)
$(Y/K)_{i,t}$	0.029	0.029
	(0.042)	(0.046)
$(res/K)_{i,t}$	0.090	0.076
	(0.069)	(0.081)
$(borr\ K)_{i,t}$	-0.0591	-0.017
	(0.083)	(0.039)
$d_{i,t}(I\ K)_{i,t}$	-0.059	-0.072
	(0.083)	(0.094)
$d_{i,t}(I\ K)_{i,t}{}^2$	-0.015	0.009
	(0.129)	(0.145)
$d_{i,t}(Y\ K)_{i,t}$	-0.010	-0.017
	(0.013)	(0.015)
$d_{it}(res\ K)_{i,t}$	0.035	0.057
	(0.040)	(0.042)
$d_{it}(borr\ K)_{i,t}$	-0.017	-0.003
	(0.019)	(0.017)
Sargan	19.6	19.7
(degrees of freedom)	(18)	(18)
p value	0.35	0.34

[i] The case of quasi-fixed costs can also be incorporated. To capture this $g(.)$ can be assumed to be any function such that; $g(0)=0$, $g'(.)>0$, $g(b)<g$ all b, i.e. the function is increasing but bounded above.