Investment and Capital Constraints:
Repatriations Under the American Jobs Creation Act

Online Appendix: Additional Results

I) Description of AJCA Repatriation Restrictions. This is a more complete description than contained in the paper.

II) Supplementary Tables and Figures.

I) Description of AJCA Repatriation Restrictions

The intent of the American Jobs Creation Act was to encourage domestic investment by lowering the tax cost of repatriating income that US firms had earned abroad. However, Congress recognized that firms would have an incentive to avail themselves of the tax reduction without increasing investment. They, therefore, enacted a series of qualifications and restrictions that we outline below.

A) Repatriation Must Be In Cash

For the dividend to qualify for the lower tax rate under the AJCA, the firm must repatriate cash from its foreign subsidiary. This could be a problem for firms that have their foreign earnings invested in non-cash assets and have limited cash in their foreign subsidiary. For firms in our sample that repatriated dividends under the AJCA, the amount of repatriation relative to the firm's total cash holdings in the prior year, not just cash in the foreign subsidiary, is 133% (the median ratio is 46%). Twenty-six percent of the firms repatriated more cash than their total firm-wide cash holdings as of the end of the fiscal year prior to repatriation or in the year they repatriated their foreign earnings under the AJCA (Graham, Hanlon, and Shevlin's (2010) survey results report similar magnitudes). Thus, at least a quarter of the firms brought back more cash than they had in their foreign subsidiaries, and if not all of a firm's cash is in its foreign subsidiary, this percentage is even higher. This is why foreign cash holdings are an incomplete measure of the firm's ability to take advantage of the AJCA tax reduction.

It is clear from the data that firms were able to generate additional cash in their foreign subsidiaries to fund their repatriation. An obvious approach, for cash poor subsidiaries of financially unconstrained parents, is for the foreign subsidiary to borrow cash from their parent, and then dividend the cash back to the parent. Such a direct solution, however, was prohibited by the AJCA.[1] The amount of the dividend eligible for the lower tax rate is reduced by any increase in indebtedness of the foreign subsidiary with respect to the parent (i.e. any loan from the parent to the subsidiary). The increase in indebtedness is calculated from October 3, 2004 to the close of the tax year in which the DRD election is taken (i.e. the tax year in which the repatriation is taken). Although the subsidiary could not borrow from the parent, they could, and in many cases did, borrow from the capital markets. In our search of 10-Ks, we found a number of cases where firms described the borrowing transactions that were undertaken to finance the dividend.[2] Though not often stated, these borrowing transactions could be of relatively short duration. Remember, the increase in indebtedness between the parent and the foreign subsidiary is measured as of the end of the tax year in which the foreign income is repatriated. Thus in theory, the foreign subsidiary could borrow from the market, and then repay the loan after the close of the tax year with proceeds from the parent.

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[1] It is also rare. According the survey results of Graham, Hanlon, and Shevlin (2010) only one percent of the repatriated funds were borrowed from the foreign subsidiary's parent. An alternative strategy would be for the parent to make an equity investment prior to the year they repatriated foreign income under the AJCA. See Dharmapala, Foley, and Forbes (2011) for evidence consistent with this strategy.

[2] "Eastman fully utilized the Euro Facility in the fourth quarter 2005 by borrowing $189 million. These funds comprised a significant portion of the funding for the 2005 repatriation of undistributed foreign earnings under the provisions of the American Jobs Creation Act." [Eastman Chemical Company, 10-K, December 31, 2005, Eastman repatriated 580M].

"...we entered into a $500.0 million credit facility with a syndicate of banks consisting of a $300.0 million term loan and a $200.0 million revolving credit facility. The term loan, which we used to facilitate a one-time repatriation of qualified foreign earnings under the American Jobs Creation Act (AJCA)..." [Gilead Sciences Inc 10-K, December 31, 2005. Gilead repatriated $280M].

"In 2005, the company executed a plan to repatriate $1.1 billion of undistributed foreign earnings pursuant to the American Jobs Creation Act of 2004 (see Note 7 to the consolidated financial statements). To fund the repatriation for Europe and Canada, the company entered into a five-year, $400-million revolving credit facility and a five-year, $200-million revolving credit facility with a syndicate of international banks." [Praxair Inc 10-K, December 31, 2005].

B) Limits on Repatriation Amount

When firms have unrepatriated foreign income, they may be required to report a deferred tax liability on their balance sheet. This is the marginal tax which they will owe when the income is repatriated. In our numerical example, the deferred tax liability would be the $30 in taxes that are due upon repatriation. An exception to this rule is contained in Accounting Principles Board Opinion 23 (APB 23 - Accounting for Income Taxes - Special Areas). If the income is "indefinitely" or "permanently" reinvested outside the US, APB 23 allows firms to report no deferred tax liability (Albring, Dzuranin, and Mills, 2005). In this case, the firm reports the amount of permanently invested income ($95 in our numerical example) and/or the incremental tax that would be due upon repatriation ($30 in our numerical example) in the income tax notes of their 10-K.

The AJCA limits the amount of foreign income that is eligible for the AJCA dividend received deduction (DRD) to the maximum of three numbers: (1) the amount of foreign earnings that are "permanently reinvested outside the United States" as reported on the firm's financial statements (e.g. the firm's 10-K), (2) the tax liability attributable to earnings that are permanently invested outside the United States as reported on the firm's financial statements divided by 0.35, or (3) $500M. The first two numbers are treated as zero if they are not reported.[3] The $500M limit was included for firms which have foreign earnings, but did not classify them as indefinitely invested abroad, or for firms which do not file public financial statements (e.g. private firms). In our example, the first two limits would allow our firm to repatriate $95 (the first limit) or $85.7 (=$30/35%, the second limit). As long as the foreign tax rate is positive, the second limit is always smaller than the first. The second limit was included in case firms reported the incremental tax, but not the amount of the indefinitely invested income. In our sample, less than one percent of the firms reported the incremental tax that would be due upon repatriation, but not the amount permanently invested abroad. Almost six percent of firms reported they had foreign income that was permanently invested abroad, but did not report a specific number. For these firms, the first two limits are zero, and thus their maximum repatriation would be $500M.

C) Incremental Repatriations.

The lower tax rate on repatriations under the AJCA applied only to incremental repatriations or repatriations above a base rate level of repatriations [§965(b)(2)]. To calculate the base level of dividends from foreign subsidiaries, firms took the average of the last five tax years ending on or before June 30, 2003 (dropping the high and low amounts). Only the amount of the repatriation above this base level was eligible for the tax subsidy. Thus in our numerical example, if the firm had repatriated 20 in each of the prior five years, only 75 would be eligible for the reduced tax rate.

D) Permissible Uses of the Repatriated Income

The stated legislative intent of the law was to encourage domestic investment and employment. Thus, to qualify for the lower tax rate on repatriated foreign income, the firm must adopt a domestic reinvestment plan that describes the planned investment in the US (IRS Notice 2005-10). The list of permissible investments include expenditures on "worker hiring and training, infrastructure, research and development, capital investments or the financial stabilization of the corporation for the purposes of job retention or creation." (American Jobs Creation Act of 2004, Section 422: Incentives to reinvest foreign earnings in United States). The last phrase was

[3] These two numbers (the permanently invested foreign income and the incremental tax which would be due upon repatriation) are based on the numbers reported on the firm's most recent financial statement filed with the SEC on or before June 30, 2003. The original effective date of the law was June 30, 2003. Due to delays in drafting, this was pushed back to June 30, 2004. However, the date for the financial statements was not changed from June 30, 2003 because the tax committee did not want to give firms the opportunity to increase the amount of income which they report as indefinitely invested abroad and thus increase the amount of qualified dividends which they could claim.

interpreted to mean that paying down debt would be an acceptable use of the repatriated funds.[4] The list was not meant to be exhaustive, but certain uses of the funds (e.g. payments for executive compensation, distributions by the firm to its shareholders, or tax payments), were explicitly prohibited. Later regulations explicitly included expenditures on advertising or marketing and investment in brand names, trademarks, and other intangibles assets as permissible investments (IRS Notice 2005-10, February, 2005).

[4] "The repayment of debt ordinarily will be considered to contribute to the financial stabilization of the taxpayer because it improves the taxpayer's debt-equity ratio and reduces the taxpayer's obligations for debt service. An increase in the taxpayer's credit rating due to the debt repayment is not required. Such an increase, however, would be an indication of a contribution to financial stabilization. The requirement that financial stabilization be for the purposes of job retention or creation in the United States is satisfied if, at the time the domestic reinvestment plan is approved by the taxpayer's president, chief executive officer, or comparable official, the taxpayer's reasonable business judgment is that the resulting financial stabilization will be a positive factor in its ability to retain and create jobs in the United States." Internal Revenue Service, Notice 2005-10, February, 2005.

II) Supplementary Tables and Figures

Table A-I: Hypothetical Data Structure
A More General Structure

Group		Before	After	Change
1	No Tax Adv Foreign Earnings (do not repatriate under the AJCA)	Y_1	Y_1	0
2	Positive Tax Adv Foreign Earnings (do not repatriate under the AJCA)	Y_2	$Y_2+\gamma$	γ
3	Positive Tax Adv Foreign Earnings (repatriate under the AJCA and unconstrained)	Y_3	$Y_3+\gamma+\delta$	$\gamma+\delta$
4	Positive Tax Adv Foreign Earnings (repatriate under the AJCA and capital constrained)	Y_4	$Y_4+\gamma+\delta+\beta$	$\gamma+\delta+\beta$

This table describes a more general hypothetical data structure than we present in Table I of the paper. To fully capture the results of the paper we need to include four groups. Since the effect of repatriation depends upon whether firms are capital constrained for some results (e.g. the investment results), we have divided group 3 (repatriators) in Table 1 into group 3 (repatriators who are unconstrained) and group 4 (repatriators who are capital constrained) in this table. As in Table I, we allow the change in the dependent variable to depend upon the presence of foreign earnings in low tax jurisdictions (this is captured by γ). In this table, we also allow the change in the dependent variable to depend upon repatriation (this is captured by δ) and incrementally if the firms are capital constrained (this is captured by β). If δ and β are zero, this is the data structure from Table I and is what we find the for the dividend results. If β is positive and δ and γ are zero, this is essentially what we find for the investment results.

Using the data structure from Table A-I, we can calculate the DID coefficient which would be produced by each of the prior methods discussed in the paper. The Blouin and Krull (2009) method compares the change in the firms that repatriate (group 3 and 4) to the firms that do not repatriate (group 1 and 2). Given this data structure, the DID coefficient from the BK method is:

$$\begin{aligned}
&\mathrm{DID}_{\mathrm{BK}} = \mathrm{Diff}\left[\mathrm{Group}\,3\ \&\ 4\right]\text{-}\mathrm{Diff}\left[\mathrm{Group}\,1\&2\right] \\
&= \frac{\alpha_3\Delta Y_3+\alpha_4\Delta Y_4}{\alpha_3+\alpha_4} - \frac{\alpha_1\Delta Y_1+\alpha_2\Delta Y_2}{\alpha_1+\alpha_2} \\
&= \frac{\alpha_3\left(\gamma+\delta\right)+\alpha_4\left(\gamma+\delta+\beta\right)}{\alpha_3+\alpha_4} - \frac{\alpha_1 0+\alpha_2\gamma}{\alpha_1+\alpha_2} = \beta + \qquad \textbf{(1)} \\
&= \gamma+\delta+\frac{\alpha_4}{\alpha_3+\alpha_4}\beta - \left(\frac{\alpha_2}{\alpha_1+\alpha_2}\right)\gamma = \gamma\left(\frac{\alpha_1}{\alpha_1+\alpha_2}\right)+\delta+\left(\frac{\alpha_4}{\alpha_3+\alpha_4}\right)\beta
\end{aligned}$$

When repatriation has an effect ($\delta>0$) but the other effects (β and γ) are zero, the BK method estimates the correct DID regression coefficient. When the presence of unrepatriated foreign earnings is the only effect (γ is positive, but β and δ are zero), the BK DID coefficient is positive

even though repatriation has no effect. This is what we saw in Table I and in the dividend results (Table VIII). Blouin and Krull (2009) did not examine the investment decision. When we use their method to examine investment without regard to whether firms are capital constrained, we find no effect (the coefficient is positive, small, and statistically insignificant). Given our estimates from Table V, column IV, γ and δ are small and negative (-0.0082 and -0.0044 respectively) and β is 0.0257. Thus given equation (1), the DID coefficient from the BK method could be of either sign.[5]

We next calculate the coefficient we would expect from the Dharmapala, Foley, and Forbes (2011) method given the data structure in Table A-I. The DID coefficient from the DFF method is:

$$\begin{aligned} DID_{DFF} &= Diff\left[Group\,2\,\&\,3\&4\right] - Diff\left[Group\,1\right] \\ &= \frac{\alpha_2\Delta Y_2+\alpha_3\Delta Y_3+\alpha_4\Delta Y_4}{\alpha_2+\alpha_3+\alpha_4} - \Delta Y_1 > 0 \\ &= \frac{\alpha_2\gamma+\alpha_3(\gamma+\delta)+\alpha_4(\gamma+\delta+\beta)}{\alpha_2+\alpha_3+\alpha_4} - 0 = \gamma + \delta\left(\frac{\alpha_3+\alpha_4}{\alpha_2+\alpha_3+\alpha_4}\right) + \left(\frac{\alpha_4}{\alpha_2+\alpha_3+\alpha_4}\right)\beta \end{aligned} \quad \textbf{(2)}$$

When repatriation has an effect ($\delta>0$) but the other effects (β and γ) are zero, the DFF method estimates a positive DID regression coefficient but it is biased toward zero (the coefficient on δ is less than one). When the presence of unrepatriated foreign earnings is the only effect (γ is positive, but β and δ are zero), the DID coefficient is positive and larger than the BK coefficient even though repatriation has no effect. This is what we saw in Table I and in the dividend results (Table VIII). When we use the DFF method to examine investment without regard to whether firms are capital constrained, we find no effect (the coefficient is negative, small, and statistically insignificant). Given our estimates from Table V, column IV, γ and δ are small and negative (-0.0082 and -0.0044 respectively) and β is 0.0257. Thus given equation (2), the DID coefficient from the DFF method could again be of either sign. Comparing the predicted DFF coefficient (equation 2) to the predicted BK coefficient (equation 1), we find that the weight on γ (which we estimate to be -0.0082) is larger, the weight on δ is smaller, and the weight on β (which we estimate to be 0.0257) is appreciably smaller. This is why it is possible to get a small or slightly negative coefficient if the increase in investment we observe is concentrated in the subset of firms who are capital constrained repatriators.

[5] We can not precisely calculate the DID coefficient we should expect from the BK method using our estimates for at least two reasons. First the division of the sample into firms with and without unrepatriated foreign earnings is not a binary classification. It is a probabilistic classification based on the estimates from Table IV (Estimated Probability of Repatriation). This means that the αs in the equation are not precisely defined. A second issue is we include variables in column IV, of Table V, which are not included in column I, such as our measures of capital constraints interacted with a post-2003 dummy variable. Thus equation (1) is meant to provide intuition for what DID coefficients we could expect not a precise number. The precise number is obtained by running the regression in column I.

Table A-II: Investment Incentives of the AJCA
Alternative Specifications

	I	II	III	IV	V	VI	VII	VIII
Pr[Firm Repatriates]	-0.0082[10]	-0.0086	-0.0035	-0.0104[5]	-0.0081[10]	-0.0056	-0.0071	-0.0066
	(0.0048)	(0.0076)	(0.0051)	(0.0052)	(0.0048)	(0.0054)	(0.0078)	(0.0053)
Residual[Firm Repatriates]	-0.0044	-0.0043	-0.0051	-0.0051	-0.0045	-0.0012	-0.0019	-0.0008
	(0.0036)	(0.0059)	(0.0036)	(0.0035)	(0.0036)	(0.0036)	(0.0054)	(0.0036)
Residual * Capital Constrained	0.0257[1]	0.0214[10]	0.0321[1]	0.0307[1]	0.0260[1]	0.0374[5]	0.0282[10]	0.0413[5]
	(0.0097)	(0.0111)	(0.0094)	(0.0094)	(0.0097)	(0.0179)	(0.0167)	(0.0173)
Log(Market Value of Assets)	-0.0090[1]	-0.0159[1]	-0.0085[1]	-0.0090[1]	-0.0090[1]	-0.0101[1]	-0.0168[1]	-0.0093[1]
	(0.0023)	(0.0034)	(0.0023)	(0.0023)	(0.0023)	(0.0024)	(0.0035)	(0.0024)
Market Value of Assets/ Book Value of Assets	0.0071[1]	0.0068[1]	0.0069[1]	0.0070[1]	0.0071[1]	0.0065[1]	0.0061[1]	0.0063[1]
	(0.0011)	(0.0014)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0014)	(0.0011)
Pre-investment earnings/BVA	0.0167	-0.0265[5]	0.0122	0.0167	0.0167	0.0135	-0.0323[5]	0.0084
	(0.0115)	(0.0134)	(0.0114)	(0.0115)	(0.0115)	(0.0114)	(0.0130)	(0.0113)
Capital Constrained if Year > 2003, 0 otherwise	-0.0138[1]	0.0005		-0.0138[1]	-0.0138[1]	-0.0157[1]	-0.0011	
	(0.0030)	(0.0038)		(0.0030)	(0.0030)	(0.0030)	(0.0036)	
R2	0.7210	0.0097	0.7207	0.7211	0.7210	0.7343	0.0125	0.7339
Number of Observations	37294	30454	37294	37294	37294	34209	27420	34209

Notes:

This table contains alternative specifications of investment model from Table V of the paper. Two of the regressions from Table V have been included for comparison.

Column I: This is column IV from Table V and shows the base line estimate of the increase in investment from credit constrained firms that repatriate income when capital constrained is measured as the percentage of the fiscal years during 2000 to 2003 in which the firm's investment expenditures exceeded its internal cash flow.

Column II: This is the same model as column I, except the model is estimated in first differences.

Column III: This is the same model as column I, except that we have dropped the variable Capital Constrained if year>2003. This variable is equal to our measure of capital constrained in 2004 and later and zero otherwise.

Column IV: This is the same model as column I, except in the first stage used to predict the probability of repatriation we used a linear regression opposed to a logit model.

Column V: This is the same model as column I, except in the first stage logit model used to predict the probability of repatriation we used Graham's (1996) measure of the effective marginal tax rate before interest instead of 35% in our calculation of the Estimated Repatriation Tax. The correlation between the probability predicted by this first stage model and the model in column II of Table IV is greater than 0.99.

Column VI: This is column V from Table V and shows the base line estimate of the increase in investment from credit constrained firms that repatriate income where capital constrained is measured as the percentage of the fiscal years during 2000 to 2003 in which the firm's investment expenditures exceeded its internal cash flow times a dummy variable which is equal to one of the firm does not have a bond rating and zero otherwise.

Column VII: This is the same model as column VI, except the model is estimated in first differences.

Column VIII: This is the same model as column VI, except that we have dropped variable capital constrained if year>2003. This variable is equal to our measure of capital constrained in 2004 and later and zero otherwise.

Table A-III: Investment Incentives of the AJCA
Alternative Measures of Capital Constraints

	Small	No Divs	WW	Small & Low CF	No Divs & Low CF	WW & Low CF
Pr[Firm Repatriates]	-0.0070	-0.0062	-0.0050	-0.0102[5]	-0.0091[10]	-0.0086
	(0.0052)	(0.0052)	(0.0062)	(0.0051)	(0.0051)	(0.0061)
Residual[Firm Repatriates]	0.0011	0.0017	0.0020	0.0004	-0.0012	0.0000
	(0.0034)	(0.0034)	(0.0039)	(0.0034)	(0.0035)	(0.0038)
Residual*Capital Constrained	0.0445[5]	0.0072	0.0253	0.0955[5]	0.0380[5]	0.0807[10]
	(0.0221)	(0.0080)	(0.0208)	(0.0471)	(0.0182)	(0.0444)
Log(Market Value of Assets)	-0.0093[1]	-0.0093[1]	-0.0143[1]	-0.0099[1]	-0.0100[1]	-0.0146[1]
	(0.0024)	(0.0024)	(0.0028)	(0.0024)	(0.0024)	(0.0028)
Market Value of Assets/ Book Value of Assets	0.0063[1]	0.0063[1]	0.0078[1]	0.0065[1]	0.0065[1]	0.0078[1]
	(0.0052)	(0.0052)	(0.0012)	(0.0011)	(0.0011)	(0.0012)
Pre-investment earnings/BVA	0.0084	0.0083	0.0074	0.0133	0.0134	0.0118
	(0.0113)	(0.0113)	(0.0130)	(0.0114)	(0.0114)	(0.0131)
Capital Constrained if Year > 2003, 0 otherwise	-0.0005	-0.0004	-0.0030	0.0055[1]	0.0058[1]	0.0017
	(0.0020)	(0.0020)	(0.0029)	(0.0021)	(0.0021)	(0.0030)
R2	0.7339	0.7338	0.7100	0.7344	0.7343	0.7104
Number of Observations	34209	34209	24203	34209	34209	24203

Notes:

The table contains panel regressions of approved domestic investment to book value of assets on firm characteristics. Each model includes the probability of repatriation (based on the coefficient estimates from Table IV, column II), the residual (the AJCA dummy variable minus the probability of repatriation) and the residual multiplied by a measure of capital constraints.

In the first three columns of Table A-II we use traditional measures of capital constraints and interact these with the residual. The measures we examine are: Small (whether the firm is below the median size of the firms in the sample in the corresponding year), No Divs (the firm does not pay a dividend), and WW (the Whited-Wu financial constraints index). In the next three columns of Table A-III we interact these three measures with the percentage of the fiscal years during 2000 to 2003 in which the firm's investment expenditures exceeded its internal cash flow. We find that firms who are classified as capital constrained by these measures invest significantly more when they repatriate income but only if they are also cash flow negative (with the exception of the small measure in column I). Firms who are classified as capital constrained by these measures, but who generate sufficient internal capital did not invest more when they repatriated. The estimated investment response in columns IV-VI are both statistically significant and economically larger than what we find in Table V (the coefficients range from 3.8 to 9.6% versus 2.6 and 3.7%).

Table A-IV: Employment Effect of AJCA

	I	II	III	IV	V
Firm Repatriated under AJCA =1 if yes	-0.0154 (0.0129)				
Pr[Firm Repatriates]		-0.0130 (0.0213)	-0.0183 (0.0222)	-0.0411[10] (0.0219)	-0.0122 (0.0220)
Residual[Firm Repatriates]			-0.0143 (0.0134)	-0.0087 (0.0165)	-0.0120 (0.0144)
Residual*Capital Constrained				-0.0390 (0.0346)	-0.0483 (0.0418)
Log(Market Value of Assets)	0.3625[1] (0.0060)	0.3625[1] (0.0060)	0.3625[1] (0.0060)	0.3596[1] (0.0060)	0.3561[1] (0.0061)
Market Value of Assets/ Book Value of Assets	-0.0935[1] (0.0027)	-0.0935[1] (0.0027)	-0.0935[1] (0.0027)	-0.0928[1] (0.0026)	-0.0929[1] (0.0027)
Pre-investment earnings/BVA	-0.0013 (0.0239)	-0.0013 (0.0240)	-0.0014 (0.0240)	0.0177 (0.0240)	0.0175 (0.0242)
Capital Constrained & Year > 2003 (=1 if yes)				-0.0629[1] (0.0095)	-0.0675[1] (0.0096)
R2	0.9922	0.9922	0.9922	0.9922	0.9923
Number of Observations	33846	33846	33846	33846	33028

Notes:

The table contains panel regressions of the log of domestic employment (from Compustat) on firm characteristics and controls for whether the firm was likely to repatriate as well as whether it did. The dependent variable is capped at plus or minus 50 percent of the firm's average employment to reduce the effects of outliers. Column I contains a dummy variable equal to one in the year the firm repatriated and following years, and zero other wise. In column II, the dummy variable is replaced by the probability that the firm repatriates under the AJCA in years 2004 and beyond, and zero otherwise. The probability of repatriation is based on the coefficient estimates from Table IV, column II. In column III, both the probability of repatriation and the residual (the dummy variable from column I minus the probability of repatriation) are included. In columns IV and V, the residual is interacted with a measure of capital constraints. In column IV, capital constrained is measured as the percentage of the fiscal years during 2000 to 2003 in which the firm's investment expenditures exceeded its internal cash flow. In column V, capital constrained is measured the same way if the firm does not have an S&P long-term debt or commercial paper rating, and zero otherwise. Each regression contains a dummy variable for each firm and each year. Standard errors clustered by firm are reported in parenthesis. The sample runs from 2000 to 2007.

Table A-V: Leverage Effects of the AJCA
Alternative Specifications

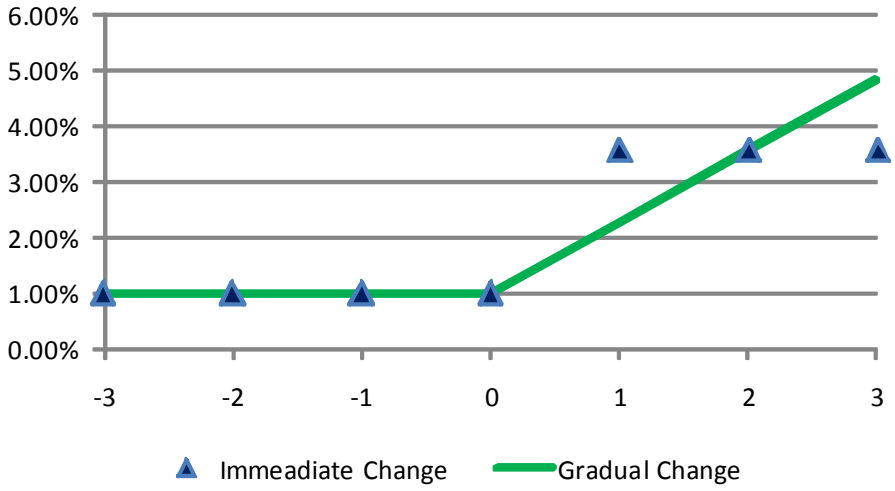
	II	III
Dependent Variable	D/MVA	D/MVA
Pr[Firm Repatriates]	-0.0199[1]	-0.0096[5]
	(0.0063)	(0.0041)
Log(Market Value of Assets)	0.0056[5]	-0.0013
	(0.0028)	(0.0032)
Market Value of Assets/	-0.0183[1]	-0.0133[1]
Book Value of Assets	(0.0010)	(0.0010)
ROA (EBIT/BVA)	-0.1048[1]	-0.1092[1]
	(0.0094)	(0.0086)
R2	0.8463	0.0683
Number of Observations	37157	30298

Notes:

The table contains panel regressions of the debt to market value of asset ratio on firm characteristics and the probability of repatriation. Each regression contains a dummy variable for each firm and each year. Standard errors clustered by firm are reported in parenthesis. The sample runs from 2000 to 2007.

Column I: This is column II from Table VII and is reported for comparison.
Column II: This is the same model as column I, except the model is estimated in first differences.

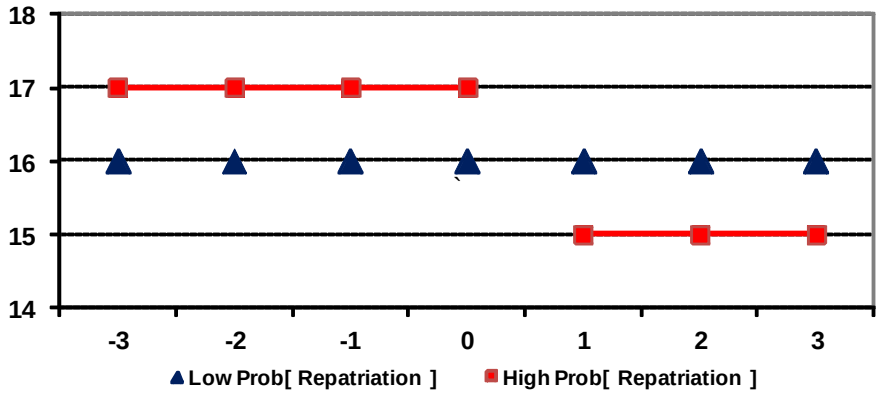
Figure A-1: Different Data Structures in a DID Regressions
Immediate versus Gradual Change



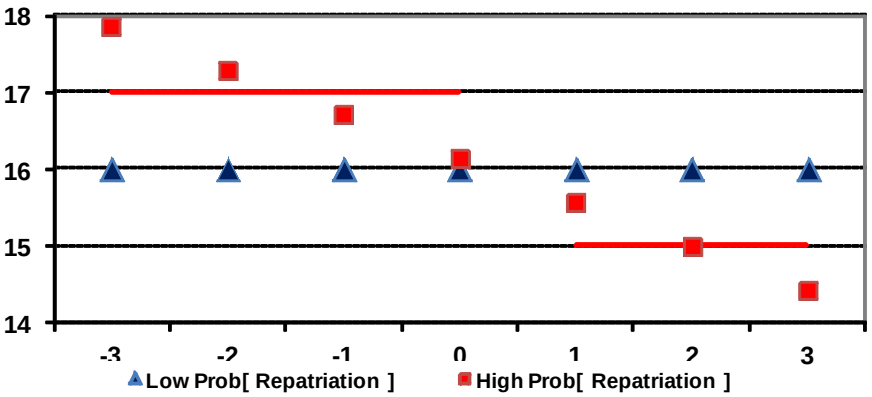
Notes:

The figure contains a graph of two hypothetical data structures. In the immediate change example (diamonds), the level of investment for the treated firms jumps up 2.57% in the year of repatriation (year 1) and remains there for the rest of the sample. In the gradual change example (line), the level of investment for the treated firms starts rising in the year of repatriation and rises by 1.29% each year for three years. The investment level is assumed to be constant for the untreated firms in both cases. Since the average investment rate in the post-repatriation period (years 1-3) is equal to 3.57% in both cases, the estimated investment response based on a difference-in-difference (DID) regression will be the same (a coefficient of 2.57% = 3.57 -1.00%). If we estimate a first difference version of the DID regression opposed to a levels regression, the estimated coefficient will be the same (2.57%) in the case of a immediate change, but smaller (1.29%) in the case of the gradual change. The first difference version of the model assumes the adjustment is immediate (year 1) and complete (there are no further adjustments after year 1). This is why it underestimates the full change in investment if the change is not immediate and complete.

Figure A-2: Different Data Structures in a DID Regressions
Panel A: Discrete Change



Panel B: Gradual Change



Note:

The figures contain two hypothetical data structures for firms' leverage over time. The treated firms (high probability of repatriation) is plotted with squares and the untreated firms (low probability of repatriation) is plotted as triangles. In Panel A, the leverage of the treated firms is assumed to remain constant until the law changes in year 1, then drops by 2% and remains constant for the rest of the sample. The leverage of the untreated firms is assumed to be constant throughout the sample period. In Panel B, the leverage of the treated firms is assumed to decline uniformly each year over the sample period, while the untreated firms is once again assumed to be constant. For illustrative purposes, we chose the annual rate of decline, in Panel B, so that the average leverage in years 1 to 3 would be 2% less than the average leverage in years minus 3 to 0. These averages are graphed as the straight line in both figures.

We can now run a difference-in-difference (DID) regression. The coefficient in a DID estimation is the average of the dependent variable after the change (year 1 to 3) minus the average of dependent variable prior to the change (year minus 3 to 0) for the treated firms minus the same change for the untreated firms (zero in our illustration here). The estimated coefficient will be negative 2 percent in both cases, even though the actual data structures are quite different. As discussed above, the first difference coefficient will be smaller than the DID coefficient if leverage declines gradually (Panel B) but not if it drops discretely (Panel A). This is what we find for leverage (see footnote 26 and Table A-V). It also explains why when we estimate a separate set of time dummies for the treated and untreated firms, we see very different trends not a discrete change around the passage of the AJCA (see Figure 2).