MERGERS AND ACQUISITIONS: SECTORAL AND LABOUR MARKET EFFECTS

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Structure

- Introduction;
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- Data;
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Introduction

- The Portuguese case is an interesting subject of investigation as it has undergone since 1990 an accelerating consolidation process.

- Additionally, a comprehensive dataset covering this period is available so it is possible to evaluate the impact of M&A operations on the individuals whose firms where subject to ownership changes.

Introduction

- This study contributes by analysing the effects of M&A at the individual level, considering the relationship between ownership and workers.
- The aim of the study is to evaluate the impact of M&A on labour market for workers of acquired firms and, specifically, on compensation of a particular group of workers, namely managers.

Theoretical background

- Some studies investigate the impact of M&A on employment and they present ambiguous results.
  - Several studies report negative employment effects of M&A: Conyon *et al.*, (2002); Gugler and Yurtoglu (2004); Siegel *et al.* (2008).
  - Positive effects are found in Conyon *et al.* (2004); McGuckin and Nguyen (2001); Siegel *et al.* (2008).

Theoretical background

- Literature on CEO establishes a stronger relationship between pay and size (Girma *et al.*, 2006; Guest, 2007; Jensen, 1988):
  - Growth by M&A is attractive for managers who desire to increment their remuneration ;
  - M&A are seen as a strategy to align shareholders and managers interests.

Theoretical background

- M&A – executive pay relationship:
  - Evidence suggests that firms involved in M&A experiments pay increases (Bliss and Rosen, 2001; Guest, 2007; Guirma *et al.* 2006; Jensen, 1986; Khorana and Zenner, 1988).
  - However, evidence on whether M&A effects are negligible is pointed out on Avery *et al.* (1998) and Lambert and Larcker (1987).

Theoretical background

- Evidence confirms the existence of positive wage premium for foreign firms.
- Guest (2007) points out some arguments that explain this premium. However, in his study, there is no evidence that such differences exist between foreign and domestic acquisitions.
- Similar conclusions are obtained by Heyman *et al.* (2007); Martins (2004); Martins and Esteves (2008).

Data

- The analysis draws on a large matched employer-employee dataset known as *Quadros de Pessoal* (QP).
- Records are available at the firm and plant level as well as at the worker level.
- We use longitudinal data on firms and their employees from 1985 to 2007.
- The existence of unique (time-invariant) identifiers allows matching firms and workers in each year and following them over time.

Data

- The entities in our sample were restricted to those operating on "Financial Intermediation" (code 65), according with the two digits sector classification of the Portuguese Classification of Economic Activities - CAE (1995 version).

- Additionally, we restrict entities to those operating on "other monetary intermediation" (code 65120).

Data

- After the creation of the main dataset, we identify domestic acquisitions using data collected on an annual basis by the *Associação Portuguesa de Bancos* (APB) in their *Boletins Informativos*.

- We identify also the entities not engaged in those processes.

Data

Table 1 – Major banking transformations

Credit institution	Period
Acquisition of Banco Fonsecas & Burnay by Banco Português de Investimento.	1991
Acquisition of Banco Português do Atlântico by Banco Comercial Português.	1995
Acquisition of Banco Fomento do Exterior and Banco Borges & Irmão by Banco Português de Investimento.	1996
Merger of Banco Fonsecas & Burnay, Banco Fomento do Exterior, Banco Borges & Irmão and Banco Universo into Banco BPI.	1998
Merger of Banco Argentaria into Banco Bilbao Viscaya.	2000
Merger of Banco Nacional Ultramarino into Caixa Geral de Depósitos.	2001
Merger of Banco Mello, Banco Mello Imobiliário and Banco Português do Atlântico into Banco Comercial Português.	2001
Merger of Banco Pinto & Sotto Mayor into Banco Comercial Português.	2001
Merger of Credit Lyonnais Portugal into Banco Bilbao Viscaya Argentaria	2001
Acquisition of Banco Nacional de Crédito by Banco Popular Español.	2003
Merger of Banco Expresso Atlântico and Credibanco into Banco Comercial Português.	2004
Merger of Banco Totta & Açores and Banco Santander Portugal into Crédito Predial Português.	2004
Merger of Banco Internacional de Crédito into Banco Espírito Santo.	2005

Source: *Associação Portuguesa de Bancos.*

Data

- After checking and clearing for inconsistencies, the dataset was restricted for the period 1993 to 2007 which resulted in an unbalanced panel with 747 921 observations (workers/years) and a total of 118 194 workers.

- The banks were categorized according to their participation or not in M&A processes. The banks that engaged in these processes represent, approximately, 86% of our sample against 14% that correspond to those that did not participate on M&A.

Data

Table 2 - Summary statistics (acquirers, acquired and non merging firms)

	M&A		Not M&A	All
Variable	**Acquirer**	**Acquired**		
Number of establishments				
Mean	606.8	233.8	131.5	404.8
Std. Dev.	*228.0*	*126.0*	*104.1*	*273.1*
Firm employees				
Mean	7917.0	3643.6	1373.7	5447.4
Std. Dev.	*3071.3*	*1628.2*	*1018.4*	*3516.9*
Monthly wage (real)				
Mean (euro)	847.6	768.2	939.5	832.1
Std. Dev.	*390.8*	*330.3*	*765.7*	*449.5*
Total compensation (real)				
Mean (euro)	1266.8	1160.6	1345.1	1239.8
Std. Dev.	*873.3*	*715.7*	*1399.0*	*920.2*

Source: computations from the author based on *Quadros de Pessoal*, 1993 – 2007

Data

Table 2 (Cont.) - Summary statistics (acquirers, acquired and non merging firms)

	M&A		Not M&A	All
Variable	**Acquirer**	**Acquired**		
Schooling (years)				
Mean	12.3	11.05	13.0	11.9
Std. Dev.	*3.3*	*3.5*	*3.2*	*3.5*
Age				
Mean	39.6	42.0	36.4	40.0
Std. Dev.	*9.6*	*9.8*	*9.2*	*9.8*
Tenure (years)				
Mean	12.3	15.3	8.3	12.8
Std. Dev.	*9.1*	*9.4*	*8.1*	*9.3*
Observations	372 189	269 197	106 525	748 813

Source: computations from the author based on *Quadros de Pessoal*, 1993 – 2007

Econometric method

- To analyze the impact of M&A on wages we estimate the following model:

$$w_{ijt} = \mathbf{x}_{it}\beta_1 + \mathbf{z}_{jt}\beta_2 + \beta_3 A_{it} + \alpha_i + \gamma_j + \mu_t + \varepsilon_{ijt} \qquad (1)$$

- We depart from a simplest specification using a pooled data model, however in this model the unobserved individual and firm heterogeneities are captured by the error term.

Econometric method

- The fixed effects model permits the separation of unobserved time-invariant heterogeneities from the error term, so we can avoid the omitted variable bias.

- To account for the combined individual and firm effects we follow the spell fixed effects method presented in Andrews *et al.* (2006) and adopted by Graham *et al.* (2012)

- Equation (1) can be rewritten as

$$w_{ijt} = \mathbf{x}_{it}\beta_1 + \mathbf{z}_{jt}\beta_2 + \beta_3 A_{it} + V_S + \mu_t + \varepsilon_{ijt} \qquad (2)$$

Results

- The results differ according not only with the specification adopted but also with the level of unobserved heterogeneity that is considered.

- We observe that when we control for unobserved heterogeneity the wage variation explained for some observables characteristics, namely years of schooling and years of experience, is reduced.

Table 3 – Impact of M&A on wages (all workers)

	Dependent Variable: Logarithm of the real total wage				
Independent variable	**OLS-1**	**OLS-2**	**OLS-3**	**FE-1**	**FE-2**
After	-.062***	-.063***	-.030***	.014***	-.007***
	(.002)	(.002)	(.002)	(.001)	(.001)
Number of workers (log)	-.018***	-.024***	-.066***	-.018***	.024***
	(.001)	(.001)	(.002)	(.0005)	(.002)
Foreign firm	.108***	.094***	.033***	-.004**	.006***
	(.003)	(.003)	(.002)	(.001)	(.002)
Education (years)	.083***	.079***	.078***	.014***	.010***
	(.0005)	(.0005)	(.0005)	(.001)	(.001)
Tenure (years)	-.002***	-.001***	-.0001	-.004***	-.004
	(.0002)	(.0002)	(.0002)	(.0001)	(.0001)
Experience (years)	.049***	.049***	.048***	.025***	.019***
	(.0004)	(.0004)	(.0004)	(.001)	(.001)
Experience^2	-.0005***	-.0005***	-.0005***	-.0003***	-.0003***
	(7.17e-06)	(7.16e-06)	(7.08e-06)	(3.24e-06)	(6.03e-06)
Year effects	No	Yes	Yes	Yes	Yes
Firm effects	No	No	Yes	No	Yes
Observations	741 408	741 408	741 408	741 408	741 408
Groups				117 580	150 695

Notes: (1) After is a dummy variable taking value 1 if the worker was employed in an acquired firm (after the M&A) and value zero if the worker was in a period before the M&A or not subject to M&A. (2) All firms used. (3) Robust standard errors in brackets. (4) FE-2 is a spell fixed effects regression including both individual and firm effects (5) * significant at 10%; ** significant at 5%; ***significant at 1%.

Table 4 – Impact of M&A on wages (managers)

	Dependent Variable: Logarithm of the real total wage				
Independent variable	**OLS-1**	**OLS-2**	**OLS-3**	**FE-1**	**FE-2**
After	.011	-.013	-.029**	-.004	-.078***
	(.009)	(.009)	(.010)	(.005)	(.008)
Number of workers (log)	-.044***	-.042***	-.009	-.001	.073***
	(.003)	(.003)	(.006)	(.002)	(.007)
Foreign firm	-.010	-.021**	-.106***	-.070***	-.075***
	(.008)	(.009)	(.007)	(.004)	(.007)
Education (years)	.056***	.054***	.053***	.008*	-.005
	(.001)	(.001)	(.001)	(.003)	(.004)
Tenure (years)	-.007***	-.006***	-.007***	-.001*	-.001**
	(.001)	(.001)	(.001)	(.0004)	(.0005)
Experience (years)	.047***	.046***	.048***	.020***	.008*
	(.001)	(.001)	(.001)	(.003)	(.004)
Experience^2	-.0005***	-.0004***	-.0005***	-.0002***	-.0002***
	(.00003)	(.00002)	(.00002)	(.00002)	(.00003)
Year effects	No	Yes	Yes	Yes	Yes
Firm effects	No	No	Yes	No	Yes
Observations	62 068	62 068	62 068	62 068	62 068
Groups				15 655	18 142

Notes: (1) After is a dummy variable taking value 1 if the manager was employed in an acquired firm (after the M&A) and value zero if the manager was in a period before the M&A or not subject to M&A. (2) All firms used. (3) Robust standard errors in brackets. (4) FE-2 is a spell fixed effects regression including both individual and firm effects (5) *significant at 10%; **significant at 5%; ***significant at 1%.

Table 5 – Impact of M&A on wages (workers)

	Dependent Variable: Logarithm of the real total wage						
Independent variable	**OLS-1**	**OLS-2**	**OLS-3**	**FE-1**	**FE-2**	**FE-3**	**FE-4**
After	-.003 (.003)	.005 (.003)	.084*** (.002)	.062*** (.002)	.075*** (.002)	-	-
Number of workers (log)	-.032*** (.002)	-.037*** (.002)	-.039*** (.004)	.022*** (.001)	.025*** (.003)	.036*** (.003)	.035*** (.003)
Foreign firm	.083*** (.004)	.102*** (.005)	-.027*** (.005)	-.040*** (.003)	-.053*** (.003)	-.050*** (.003)	-.053*** (.003)
Education (years)	.082*** (.0008)	.082*** (.0008)	.081*** (.0008)	.028*** (.002)	.018*** (.003)	.018*** (.003)	.018*** (.003)
Tenure (years)	.0002 (.0004)	-.00005 (-.0005)	.001** (.0004)	-.010*** (.0004)	-.0004 (.0005)	.0008 (.001)	.0007 (.001)
Experience (years)	.037*** (.0007)	.037*** (.0007)	.037*** (.0007)	.037*** (.001)	.028*** (.003)	.029*** (.003)	.029*** (.003)
Experience^2	-.0003*** (.00001)	-.0003*** (.00001)	-.0003*** (.00001)	-.0004*** (8.13e-06)	-.0004*** (.00001)	-.0004*** (.00001)	-.0004*** (.00001)
Effect at t=1	-	-	-	-		.028*** (.002)	.031*** (.002)
Effect at t=2	-	-	-	-		.011*** (.001)	.015*** (.001)
Effect at t=3	-	-	-	-		-	.017*** (.002)
Observations	266 305	266 305	266 305	266 305	266 305	266 305	266 305
Groups				49 875	56 971	56 971	56 971

Notes: (1) After is a dummy variable taking value 1 if the worker was employed in an acquired firm (after the M&A) and value zero if the worker was in a period before the M&A. (2) In this specification we restrict our analysis only on acquired firms. (3) The last two columns consider only the impact of the M&A on the acquired firms at time t=1, t=2 and t=3 (one, two and three years after the M&A, respectively). (4) Robust standard errors in brackets. (5) FE-2, FE-3 e FE-4 is a spell fixed effects regression including both individual and firm effects (6) * significant at 10%; ** significant at 5%; ***significant at 1%.

Table 6 – Impact of M&A on wages (managers)

	Dependent Variable: Logarithm of the real total wage						
Independent variable	**OLS-1**	**OLS-2**	**OLS-3**	**FE-1**	**FE-2**	**FE-3**	**FE-4**
After	.037*** (.010)	.039** (.013)	.036** (.013)	.001 (.008)	-.008 (.010)	-	-
Number of workers (log)	-.026** (.008)	-.032*** (.008)	.048*** (.011)	.083*** (.006)	.109*** (.010)	.109*** (.009)	.109*** (.010)
Foreign firm	-.0001 (.015)	.017 (.017)	-.047** (.015)	-.109*** (.011)	-.114*** (.013)	-.115*** (.013)	-.115*** (.014)
Education (years)	.051*** (.002)	.051*** (.002)	.051*** (.002)	.005 (.010)	-.015 (.010)	-.016 (.010)	-.016 (.010)
Tenure (years)	-.008*** (.001)	-.008*** (.001)	-.007*** (.001)	-.007*** (.001)	.004 (.004)	.004 (.004)	.004 (.004)
Experience (years)	.018*** (.002)	.018*** (.002)	.020*** (.002)	.004 (.010)	-.012 (.010)	-.012 (.010)	-.012 (.010)
Experience^2	.00002 (.00005)	.00002 (.00005)	-.00002 (.00005)	-.0001** (.00004)	-.0002*** (.00005)	-.0002*** (.00005)	-.0002*** (.00005)
Effect at t=1	-	-	-	-	-	.092*** (.010)	.093*** (.009)
Effect at t=2	-	-	-	-	-	-.010 (.007)	-.009 (.008)
Effect at t=3	-	-	-	-	-	-	.003 (.011)
Observations	17 079	17 079	17 079	17 079	17 079	17 079	17 079
Groups				3 961	4 405	4 405	4 405

Notes: (1) After is a dummy variable taking value 1 if the manager was employed in an acquired firm (after the M&A) and value zero if the manager was in a period before the M&A. (2) In this specification we restrict our analysis only on acquired firms. (3) The last two columns consider only the impact of the M&A on the acquired firms at time t=1, t=2 and t=3 (one, two and three years after the M&A, respectively). (4) Robust standard errors in brackets. (5) FE-2, FE-3 e FE-4 is a spell fixed effects regression including both individual and firm effects. (6) *significant at 10%; **significant at 5%; ***significant at 1%.

Results

- The negative effects of M&A on wages, more severe for managers comparing to other workers, are in accordance with Lichtenberg and Siegel (1990) and Conyon *et al.* (2002) who state a reduction in wages and compensation for non-production workers.

- The relationship between pay and size is well demonstrate which suggests that largest firms pay more, especially when considering the relation between executive pay and size as documented by Guirma *et al.* (2006), Guest (2007) and others.

Results

- The well documented foreign wage premium is not supported by our estimations which suggest a negative impact of foreign ownership on wages.
  - However our results are in line with that obtained by Heyman *et al.* (2007) in their fixed effects estimations for Swedish firms.

Conclusion

- Aiming at analysing the impact of M&A on wages of workers of acquired firms for the period 1993-2007, we provide new evidence on the impact of these operations on wages using detailed Portuguese data from *Quadros de Pessoal*.

- We find from pooled data that there is a negative effect of M&A on wages. However, when controlling for unobserved individual and firm level characteristics the estimation leads us to conclude that there is a smaller negative effect for all workers in comparison to managers.

Conclusion

- When we restrict our analysis only to the acquired firms we find a small negative wage effect for all the workers. For managers, there is positive effect of almost 4%.
- When controlling for unobserved heterogeneity, it is observed an increase in wages as a result of acquisition for all the workers. On the contrary, for managers, we observe a decrease in wages but it is not significant.
- We observe that the effects of acquisition differ over time suggesting that time dimension is an important element to consider at least for the first year after the M&A.

Conclusion

- Notwithstanding the importance of incorporating the individual and firm characteristics effects, the methodology adopted does not permit to isolate worker from firm effects.