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The Euro and its Impact on the Number, Size, Performance and Regional Spread of European Mergers and Acquisitions

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Policy Debates

Edited by FIONA WISHLADE

The Euro and its Impact on the Number, Size, Performance and Regional Spread of European Mergers and Acquisitions

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MCCARTHY K. J. and DOLFSMA W. The euro and its impact on the number, size, performance and regional spread of European mergers and acquisitions, *Regional Studies*. The macroeconomic effects of the euro have been extensively studied. The literature has, however, paid significantly less attention to the microeconomic consequences and few authors have considered if and how the euro has impacted firm-level decision-making. This paper explores if, how and in what way the euro has impacted one firm-level decision: whether to merge with or acquire another firm. This paper builds a sample of 19362 acquisitions, announced in the period 1990–2014. It shows that the euro has dramatically increased the number, size and performance of European mergers and acquisitions. Importantly, it also notes that the euro has altered the geographic spread of European acquisitions. The paper reports that since the introduction of the euro, acquirers have made increasingly distant acquisitions and have preferred targets in peripheral regions to those in the core. The results also hint at the suggestion that the euro may have led acquirers to prefer Eurozone to non-Eurozone targets. From a policy perspective, it is concluded, therefore, that the euro has significantly impacted firm behaviour and has contributed, in a positive sense, to regional integration.

Mergers and acquisitions Currency unions Euro Merger performance Merger spread Core and periphery

MCCARTHY K. J. and DOLFSMA W. 欧元，及其对欧洲合并与收购的数量、规模、表现及区域扩散的影响，*区域研究*。欧元的宏观经济效应已受到广泛的研究。但这些文献却鲜少关注欧元的微观经济结果，亦少有作者考量欧元是否、以及如何影响企业层级的决策制定。本文探讨欧盟是否、如何、以及透过什麼方式，影响企业层级是否合并或收购其他企业的决定。本文以 1990 年至 2014 年间宣佈的 19,362 个收购案为案例，显示出欧元戏剧性地增加了欧洲合并与收购的数量、规模与表现。重要的是，欧元改变了欧洲收购的地理扩散。本文并记述，自从欧元引入后，收购者逐渐进行远距收购，并较核心区域而言，更偏好瞄准边陲区域。研究结果同时暗示以下提议：欧元或已使得收购者偏好欧元区的标的物更甚于非欧元区。本文因而于结论中主张，从政策的角度而言，欧元已显著地影响了企业行为，并在正面意义上，导致了区域整合。

合并与收购 货币联盟 欧元 合并表现 合并扩散 核心与边陲

MCCARTHY K. J. et DOLFSMA W. L'euro et son impact sur le parc, la taille, la performance et la répartition régionale des fusions et des acquisitions européennes, *Regional Studies*. Les effets macroéconomiques de l'euro ont été étudiés de façon approfondie. Cependant, la documentation a prêté beaucoup moins d'attention aux conséquences microéconomiques et rares sont les auteurs qui ont considéré si, oui ou non, l'euro a eu un impact sur la prise de décision au niveau de l'entreprise, et de quelle façon. Cet article cherche à examiner si l'euro a eu un impact sur une décision particulière au niveau de l'entreprise, comment et de quelle façon: à savoir, devrait-on fusionner avec ou acquérir une autre entreprise? Cet article développe un échantillon

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de 19 362 acquisitions, annoncées pendant la période allant de 1990 à 2014. On montre que l'euro a augmenté sensiblement le parc, la taille et la performance des fusions européennes. Ce qui est important, c'est que l'on note aussi que l'euro a modifié la répartition géographique des acquisitions européennes. L'article indique que, depuis l'inauguration de l'euro, les acquéreurs ont réalisé des acquisitions de plus en plus éloignées et ont préféré cibler des entreprises situées dans les régions périphériques à celles qui se situent dans le centre. Les résultats laissent supposer aussi que l'euro a amené les acquéreurs à préférer cibler des entreprises qui se trouvent dans la zone euro aux entreprises hors zone euro. Du point de vue de la politique, on conclut, donc, que l'euro a eu un impact sensible sur le comportement des entreprises et a contribué, de façon positive, à l'intégration régionale.

Fusions et Acquisitions Union monétaire Euro Performance des fusions Répartition des fusions Centre-périphérie

MCCARTHY K. J. und DOLFSMA W. Die Auswirkung des Euro auf die Anzahl, Größe, Leistung und regionale Verteilung von europäischen Fusionen und Übernahmen, *Regional Studies*. Die makroökonomischen Auswirkungen des Euro wurden bereits ausführlich untersucht. Den mikroökonomischen Folgen hingegen wurde in der Literatur deutlich weniger Beachtung geschenkt; nur wenige Autoren haben sich mit der Frage befasst, ob und wie der Euro Entscheidungen auf Firmenebene beeinflusst hat. In diesem Beitrag wird untersucht, ob, wie und in welcher Weise der Euro eine bestimmte Entscheidung auf Firmenebene beeinflusst hat: die Entscheidung über eine Fusion mit bzw. die Übernahme einer anderen Firma. Der Beitrag beruht auf einer Stichprobe von 19.362 Firmenübernahmen, die im Zeitraum von 1990 bis 2014 bekannt gegeben wurden. Es zeigt sich, dass der Euro die Anzahl, Größe und Leistung der europäischen Fusionen und Übernahmen erheblich erhöht hat. Ebenso wird als wichtiger Aspekt festgestellt, dass sich durch den Euro die geografische Verteilung der europäischen Übernahmen verändert hat. Wie im Beitrag berichtet wird, haben übernehmende Firmen seit der Einführung des Euro Firmen in zunehmend größer Entfernung übernommen und Ziele in Randregionen gegenüber Zielen in Kerngebieten bevorzugt. Ebenso scheint der Euro den Ergebnissen zufolge dazu geführt zu haben, dass übernehmende Firmen Ziele in der Eurozone gegenüber Zielen in anderen Ländern bevorzugen. Aus politischer Perspektive bedeutet dies laut den Schlussfolgerungen, dass sich der Euro signifikant auf das Verhalten der Firmen ausgewirkt und positiv zur regionalen Integration beigetragen hat.

Fusionen und Übernahmen Währungsunionen Euro Leistung von Fusionen Verteilung von Fusionen Kern- und Randgebiete

MCCARTHY K. J. y DOLFSMA W. El efecto del euro en el número, tamaño, rendimiento y distribución regional de las fusiones y adquisiciones europeas, *Regional Studies*. Los efectos macroeconómicos del euro han sido estudiados ampliamente. Sin embargo, en la bibliografía se ha prestado mucho menos atención a las consecuencias microeconómicas y pocos autores se han planteado si el euro ha influido en la toma de decisiones en el ámbito empresarial y si es así, en qué medida. En este artículo analizamos si en efecto el euro ha repercutido en una determinada decisión empresarial – la decisión sobre la fusión con una empresa o su adquisición – y en este caso cómo y de qué forma. Presentamos una muestra de 19.362 adquisiciones de empresas que ocurrieron en el periodo entre 1990 y 2014. Demostramos que el euro ha aumentado de manera espectacular el número, tamaño y rendimiento de las fusiones y adquisiciones europeas. Y otro aspecto importante a tener en cuenta es que el euro ha alterado la cobertura geográfica de las adquisiciones europeas. En este artículo informamos que desde la introducción del euro, se han adquirido empresas en zonas más alejadas y se han preferido zonas periféricas en vez de céntricas. Los resultados también sugieren que el euro podría haber llevado a que los adquirentes prefieran regiones en la eurozona que fuera de ella. Desde una perspectiva política, concluimos por tanto que el euro ha influido en gran medida en el comportamiento de las empresas y ha contribuido positivamente a la integración regional.

Fusiones y adquisiciones Uniones monetarias Euro Desempeño de fusiones Distribución de fusiones Centro y periferia

JEL classifications: D, D2, D21, G, G3, G34, L, L2, L25

INTRODUCTION

In 1999, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain created the Eurozone. Greece (2001), Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014) and Lithuania (2015) subsequently joined and today 337 million Europeans use the euro.

At the macroeconomic level, a rich literature shows that currency unions, like the euro, alter the shape of the market. Studies have shown, for example, that currency unions: (1) lead to the emergence of regional

business cycles (e.g., GIANNONE and REICHLIN, 2006); (2) increase the levels of financial market integration (e.g., BAELE *et al.*, 2004); (3) reduce the incentives to embark on product and/or labour market reforms (e.g., DUVAL and ELMESKOV, 2006); (4) increase the levels of intra-regional trade (e.g., ROSE, 2000); and (5) cause inflation rates to converge (e.g., MELLER and NAUTZ, 2012). At the level of the firm, however, surprisingly little is known about if, how and in what way currency unions, in general and the euro, in particular, impact firm behaviour. Policy-makers and scholars alike (e.g., SUDARSANAM, 2003;

BJORVATN, 2004; CAMPA and HERNANDO, 2005; MOSCHIERI and CAMPA, 2009) suggest 'that the Euro has greatly influenced [firm] behaviour' (EKKAYOKKAYA *et al.*, 2009, p. 452), but surprisingly few 'have formally examined the impact of [the euro]' on the firm (ALLEN and SONG, 2005, p. 10) and none, to the best of our knowledge, has considered its impact on firm geography.

Building upon a rich literature – which suggests that policy impacts the geography of firms and that mergers and acquisitions (M&As) are a commonly employed tool for dealing with change – the purpose of this paper is to explore if, how and in what way the euro has impacted one firm-level decision: the decision to merge with, or to acquire, another firm.

It is expected that the euro will have altered the European acquisitions market for a number of reasons. Firstly, it has created a more liquid European capital market that provided companies with new sources of financing (MOSCHIERI and CAMPA, 2014) and the evidence suggests that the number of deals increases in the levels of liquidity (HARTFORD, 2005). Secondly, the introduction of the euro signalled the member countries commitment to advance the political and economic agenda of the Union, lowering the risks of crossing borders by increasing the predictability of future events (MOSCHIERI and CAMPA, 2014). Finally, the introduction of a single currency improved the efficiency of the market by eliminating the transaction costs tied to currency volatility (CAMPA and HERNANDO, 2008). In other words, the euro – together with the changes required for economic and monetary union (EMU) – decreased the costs and risks associated with acquisition, while at the same time increasing the levels of access to the market.

The impact of the euro on the market is explored using data on 19 362 intra-European acquisitions, spanning 23 years and including 48 countries, 322 regions and 4950 cities. The impact of the euro is considered in terms of the (1) number; (2) size, in terms of value; and (3) spread – with respect both to the distances between the target and acquirer and the distribution of acquisitions across the core and periphery. Finally and because describing the impact of the euro on the merger market is only half the story, the analysis is completed with a discussion of the way in which these changes have altered firm performance. The topic is explored with standard regression analysis. The results are consistent with expectations, insofar as it is found that the euro has altered the European merger market. Specifically, it is found that the euro not only has led to more deals but also to bigger, better performing and a geographically wider spread of deals.

In doing so, this study makes a number of contributions. Firstly, at a time of rising Euro-scepticism, it contributes to a real-world discussion on the

impact of the euro and the European Union (EU). Secondly, by mapping the spread of European acquisitions activity, it contributes to the literature on firm geography. Thirdly, by systematically studying the way in which the euro has impacted the European merger market, it contributes to the literature on the impact of currency unions, in general, as well as to the literature on the way in the way in which currency unions impact firm behaviour. Fourthly, by studying the role of the economic and regulatory environment on the levels of merger activity, it contributes to an underdeveloped branch of the literature on M&As (CALORI *et al.*, 1994; ROSSI and VOLPIN, 2004; BJORVATN, 2004; MOSCHIERI and CAMPA, 2009). Finally and by studying the European M&As market, the paper contributes to a literature 'which has, so far, focussed primarily on the M&A markets of the USA and UK' (MOSCHIERI and CAMPA, 2009, p. 72).

BACKGROUND

The 'Economic and Monetary Union' (EMU) is an umbrella term for a group of policies aimed at stimulating the convergence of the economies of the EU.

EMU was created in three stages. In Stage I (1990–93), the Treaty of Maastricht (1992) – which established a number of economic convergence criteria for aspiring members to the EU – was enacted. In Stage II (1994–98), the euro was created (1995), the Stability and Growth Pact (1997) – which was designed to ensure budgetary discipline after the creation of the euro – was signed, a new exchange rate mechanism (ERM II) was set up to provide stability between the euro and those countries that had opted to remain outside the euro (1997), the European Central Bank (ECB) was created (1998), and the countries that would participate in the euro were selected on the basis of their adherence to the Maastricht criteria (1998). Finally, in Stage III (1999–present), the euro transitioned from a virtual currency to a physical one and 11 countries – Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain – adopted the euro in 1999. Together, the block became known, officially, as the Euro area and, unofficially, as the Eurozone.

Since 1999, the Eurozone has grown significantly. Inside the EU, Greece adopted the euro in 2001, followed by Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014) and Lithuania (2015). Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania and Slovenia have signed agreements to join the euro, and all future members will be required to join. In the EU, in fact, only Denmark, Sweden and the UK are likely to retain their own currencies.¹ Outside the EU, Andorra (2013), Monaco (1999), San Marino (1999) and the

Vatican (1999) signed formal agreements to use the euro; Kosovo and Montenegro unilaterally adopted the euro (2002) and 23 other countries pegged their currencies to the euro.

LITERATURE

On the macroeconomic impact of the euro

A rich literature has considered the macroeconomic impact of currency unions, in general and of the euro, in particular, in a number of research domains. Firstly and in terms of market reforms, the literature on product and labour market reforms has observed that currency unions negatively impact the states' incentive to embark on reform (e.g., DUVAL and ELMESKOV, 2006). Secondly and in terms of inflation, the literature suggests that the euro has caused long-run European inflation rates to converge (e.g., MELLER and NAUTZ, 2012). Thirdly and in terms of trade, the literature suggests that currency unions, in general and the euro, in particular, should increase the level of trade (e.g., Rose, 2000); scholars estimate that the euro increased trade by between 3% (BUN and KLAASSEN, 2007) and 15% (BERGER and NITSCH, 2008; FLAM and NORDSTROM, 2006). Fourthly and in terms of financial market integration, the literature suggests that because of the euro, the money market – that is, the market for treasury bills, commercial paper, bankers' acceptances, deposits, certificates of deposits, bills of exchange, repurchase agreements, federal funds, short-lived mortgages and asset-backed securities – has been completely integrated (e.g., BAELE *et al.*, 2004), the government bonds market has converged (e.g., CAPPIELLO *et al.*, 2003), while equity markets have begun to co-vary strongly (e.g., HIGSON *et al.*, 2013). Finally and in terms of business cycle synchronization, scholars suggest that the euro has led to convergence and to the emergence of a single European business cycle (e.g., GIANNONE and REICHLIN, 2006).

On the firm-level impact of the euro

The literature has paid significantly less attention to the firm-level impact of the euro and relatively little is known about how the euro has impacted firm behaviour. Three literatures together, however, lead to a suggestion that the euro is likely to have impacted at least one firm-level decision: the decision to merge or to acquire another firm.

Theory on the impact of the euro. Firstly, one literature suggests that the euro dramatically altered the shape of the European market. Scholars suggest that the euro: (1) created a more liquid European capital market that provided companies with new sources of financing (MOSCHIERI and CAMPA, 2014) and the evidence suggests that the number of deals increases in the

levels of liquidity (HARTFORD, 2005); (2) signalled the member countries commitment to advance the political and economic agenda of the Union, lowering the risks of crossing borders by increasing the predictability of future events (MOSCHIERI and CAMPA, 2014); and (3) improved the efficiency of the market by eliminating the transaction costs tied to currency volatility (CAMPA and HERNANDO, 2008). In other words, the euro decreased the costs and risks, while at the same time increasing the levels of access to the market.

Secondly, another literature suggests that firms do not exist in an 'aspatial world' but respond to policy when defining their geographic reach (HOWELLS and BESSANT, 2012). Research on fiscal arbitrage, for example, suggests that tax differences impact firm location, because firms would rather locate in low-tax environments (e.g., SERRATO and ZIDAR, 2013). Similarly, the literature on environmental regulation (e.g., BECKER and HENDERSON, 2000), corporate governance regulation (e.g., CARBO-VALVERDE *et al.*, 2012) and labour regulation (e.g., RAO *et al.*, 2011) suggests that differences in legislation impact firm location. In other words, firm location is a function of market-level policy features.

Finally, the merger literature recognizes that 'a significant portion of merger activity [is] due to industry-level [changes]' (ANDRADE *et al.*, 2001, p. 105). Exogenous shocks – such as demand and supply shocks, which alter industry cost structures, as well as technological and regulatory shocks, which alter the rules of the game – can dramatically alter the shape of the market. Firms react to the changes with M&As, because M&As allow the acquiring firm to reorient its operation, to meet the market, far more rapidly than it might organically (e.g., GORT, 1969; MORCK *et al.*, 1988). MITCHELL and MULHERIN (1996), SCHOENBERG and REEVES (1999) and ANDRADE *et al.* (2001), for example, conclude that deregulation has been the dominant factor in M&A activity since the 1980s. Market-levels changes, in other words, lead to mergers, because mergers allow the firm to respond to change rapidly.

Putting these three literatures together, it is clear that: (1) the creation of the Eurozone resulted in a number of market-level changes; (2) firm geography is a function of market-level features; and (3) that mergers are commonly used vehicles for dealing with market-level change. It is likely, therefore, that the creation of the Eurozone will have significantly altered the shape of the European merger market in terms of the number, size, geographical spread and performance of the announced deals in the region.

Evidence on the impact of the euro. Surprisingly, however, 'few [authors] have formally examined the impact of EMU on [the levels] of consolidation within Europe' (ALLEN and SONG, 2005, p. 10).

Descriptively, a number of authors suggest that the euro impacted firm behaviour. BLANCO (2001), for example, suggests that the 'Euro stimulated [a] boom' in European deal-making (p. 42), while TEMPLETON and CLARK (2001) suggest that the euro led to a consolidation of European banking assets. CABRAL *et al.* (2002) suggest that the euro altered the shape of the European banking industry. LEES and MAUER (2003) suggest that the euro 'increase[d] the incentives for restructuring and consolidation' (p. 24). And TAYLOR (2008) suggests that the euro altered the flow of foreign direct investments. None, however, empirically tested if the euro was the cause of the observed effect.

The list of quantitative studies that describe the euro can be divided into five camps. In the first, scholars like CAMPA and HERNANDO (2004) and MOSCHIERI and CAMPA (2009) use the euro as a possible explanation for their findings. MOSCHIERI and CAMPA (2009), for example, show that European deal-makers increasingly use cash as a method of payment and conclude that this was 'probably due to the introduction of the single currency' (p. 3). In the second camp, scholars like MOSCHIERI and CAMPA (2014) and MOSCHIERI *et al.* (2014) use the euro as a control for a wider analysis. MOSCHIERI *et al.* (2014), for example, employs a 'Eurozone membership' control in their study of the impact of regional integration on the cross-border behaviour of European acquirers. In the third camp, scholars like UMBER *et al.* (2014) implicitly describe the impact of the euro within a broader study on the impact of European integration. For example, they show that European integration policy has reduced the restraining impact of national borders on cross-border acquisitions and that the rate of change varied before and after the euro, but the authors do not explicitly test the impact of the euro.

In the fourth camp, scholars like MANCHIN (2004), DELANNAY and MEON (2006), and COEURDACIER *et al.* (2009) explicitly describe the euro within the context of a broader study. MANCHIN (2004), for example, discusses the euro as one of 20 possible explanatory variables in their exploration of the European market for cross-border M&As. Exploring similar questions, DELANNAY and MEON (2006) discuss the euro as one of six explanatory variables; and COEURDACIER *et al.* (2009) discuss it as one of twelve. DELANNAY and MEON (2006) conclude that the euro had an insignificant effect on the cross-border merger market. MANCHIN (2004), however, shows that the euro has a positive and significant impact on the number and size of the deals; and COEURDACIER *et al.* (2009) conclude that the euro has increased both cross-border M&As within the Eurozone and cross-border mergers from non-Eurozone countries.

Finally and in the last camp, only a few scholars, such as ALLEN and SONG (2005) and EKKAYOKKAYA *et al.* (2009), have explicitly explored the effect of the euro on the firm. ALLEN and SONG (2005) use a sample of

European M&As, in the period 1988–2003, to consider how the euro impacted the levels of integration in the European financial services industry. They report that the euro 'reversed the trend' towards increased fragmentation that was evident before the euro and significantly 'enhance[d] regional integration in Europe' (pp. 22–23). The authors conclude that the euro had a positive impact on the levels of competition within the market for corporate control within European banking. Interestingly, however, the authors note that the euro 'does not facilitate entry by non-European institutions [i.e. banks] into Europe' (pp. 22–23).

Building upon this, EKKAYOKKAYA *et al.*'s (2009) study of the impact of the euro on the European banking industry is the first, we believe, to have considered if the impact of the euro has a positive or a negative impact on the firm. Using a sample of 963 banking acquisitions, the authors construct three subsamples: 'a pre-euro' (1990–95), 'a run-up to the euro' (1996–98) and 'a post-euro' (1999–2004) samples. Comparing performance across the samples, the authors find that deals announced in the pre-euro era created significant shareholder value, those done in the run-up to the euro neither created nor destroyed value, while those done in the post-euro era destroyed value. They conclude that the increase in competition, described by ALLEN and SONG (2005), increased the levels of premiums necessary to conclude a deal which, in turn, decreased performance.²

The existing literature, therefore, recognizes the potential for the euro to impact the market, but the empirical evidence remains relatively limited. There have been no systematic studies of the firm-level impact of the euro. Little is known about the way in which the euro has altered the shape of the market (outside the banking industry) and nothing is known in terms of the way in which the euro has impacted firm geography.

METHODS

Sample

Using the Thomson Reuters SDC, a sample is built that includes all: (1) M&As; (2) announced between 1990 and 2014; and (3) by European acquirers for European targets. Only included are deals: (4) by public/stock-listed acquirers; (5) with values above US\$10 million; (6) in which 100% of the target was acquired; and (7) which do not involve recapitalization, a repurchase of own shares or a spin-off to existing shareholders. Doing so generates a sample of 19 362 M&As.

Independent variable

Membership of the euro is used as the independent variable and a *EURO* dummy is used to distinguish between deals announced before and after accession to the euro.

Not all countries, however, joined at the same time: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain adopted the euro in 1999, Greece joined in 2001, Slovenia in 2007, Cyprus and Malta in 2008, Slovakia in 2009, Estonia in 2011 and, most recently, Latvia joined in 2014. To account for the staggered way in which the Eurozone developed, the work of EKKAYOKKAYA *et al.* (2009) is followed and a number of additional Euro-related dummy variables are created.

Firstly, a number of indicators are created that identify the acquirer country: *Acq_EURO_99*, for example, identifies acquirers from countries that adopted the euro in 1999; and *Acq_EURO_01* identifies acquirers in countries that had or adopted the euro in 2001. Next and repeating this process, a number of dummy variables are created that identify the target country: *Tar_EURO_99*, for example, identifies targets from countries that adopted the euro in 1999; and *Tar_EURO_01* identifies targets in countries that had or adopted the euro in 2001. Finally, a number of indicators are created to identify deals announced outside the Eurozone: *Acq_NON_EURO*, for example, identifies acquirers from outside the Eurozone; and *Tar_NON_EURO* identifies targets outside the Eurozone. These variables include deals, for example, from European countries that remain outside the Eurozone, such as the UK and Turkey.

Dependent variables

To consider the way in which the euro has impacted the (1) number, (2) size, (3) spread and (4) performance of European acquisitions, a number of variables are created.

Deal count. To estimate the way in which the euro has impacted the number of deals, a number of country-level count variables are created. Firstly, the number of acquirers and targets in each country are counted on both a monthly and a yearly basis. Then, a total monthly and yearly count is created for the Eurozone and non-Eurozone. The necessary data are retrieved from the Thomson Reuters SDC.

Deal spread. To estimate the way in which the euro has impacted the spread of deals: (1) the location of the target and acquiring firm is identified at the city and regional level; (2) the distance between the target and the acquirer is estimated; and (3) targets and acquires in core and peripheral regions are distinguished.

Firstly and in terms of location, the Thomson Reuters SDC is used to identify the city in which the acquiring and target firms are based. For each of the 19362 deals, the global positioning satellite (GPS) coordinates of both the target and the acquiring firm are then identified using GPS Visualizer. Then, using the haversine formula, the kilometre distance between the target and the acquirer is calculated. The formula calculates the

greater-circle distance (km) between two points over the Earth's surface.

Next and in terms of regions, the city in which the acquiring and target firms are based is used to identify their regions. Here, the NUTS (Nomenclature of Territorial Units for Statistics) geographic referencing system is used. The NUTS classification divides the members of the EU, its candidate countries (Iceland, Macedonia, Montenegro, Serbia and Turkey and members of the European Free Trade Association (EFTA) (Liechtenstein, Norway and Switzerland) into a number of comparably sized regions. The current NUTS classification lists 115 regions at the NUTS-1 level, 322 regions at the NUTS-2 level and 1491 regions at the NUTS-3 level. Germany, for example, is split into 16 NUTS-1 regions, 39 NUTS-2 regions and 429 NUTS-3 regions. Both the NUTS-1 and -2 classifications are used and the 4950 cities in the sample are matched to their respective regions.

Finally, core and periphery regions are distinguished. There are numerous ways to distinguish the core from the periphery. One of the simplest and most intuitive is to use population distributions: core areas are those with high population densities and peripheral areas are those with low population densities. In the present case, this is an appropriate measure because population densities can be used to proxy for the density of economic activity.³ Applying this approach was a three-step process. Firstly, population density estimates were retrieved from the European Statistics Office (ESO). Next, a population distribution for all regions was constructed and then split into quartiles. Regions with a population density between 2.8 and 4.4 people/km², such as Northern Norway (NO07), fall into the first quartile and the category of the least densely population regions. Regions with a population density of between 4.5 and 119.5 people/km², such as Castilla-la Mancha (ES42), fall into the second quartile; and regions with a population density of between 119.6 and 4314.7 people/km², such as Calabria (ITF6), fall into the third quartile. Finally, regions with a population density between 4314.8 and 9673.7 people/km², such as the Brussels region, fall into the fourth quartile and the category of the most densely population region. In this way, the least populated regions – that is, those in the first and second quartiles of the distribution – are defined as the most peripheral and the most heavily populated regions – that is, those in the third and fourth quartiles – as the most core. These regional indicators of core and periphery were then matched to the sample of firms.

Deal size. To estimate the way in which the euro has impacted the size of the deals announced in the region, in terms of total deal value, a number of country-level variables were created. Firstly and for each country, the total value of deals announced was estimated on both a monthly and a yearly basis. The

total value of deals announced was then estimated on both a monthly and a yearly basis for the entire Eurozone, as well as for the non-Euro states. These figures were retrieved from the Thomson Reuters SDC.

Deal performance. Finally, to estimate the way in which the euro has impacted deal performance, an event study was conducted (ZOLLO and MEIER, 2008). It values an acquisition by comparing the ‘actual’ and ‘expected’ performance of the acquiring firm. ‘Actual’ performance is a measure of how the firm actually behaved after an acquisition. ‘Expected’ performance, by contrast, is a forecast of how the firm should have behaved in the absence of an acquisition, given how it has behaved in the year prior to an event. Subtracting actual from expected performance and controlling for industry-wide changes in the same period results in a measure referred to as ‘abnormal returns’. These are the gain/losses that the acquiring firm incurs from the acquisition. Summing the abnormal returns over a predefined period, or window, provides the cumulative abnormal return (CAR). A positive CAR suggests that the acquisition created value, while a negative CAR suggests that the acquisition destroyed value. The higher the CAR, in other words, the better the performance of the deal. CARs are estimated to include a period before the announcement – to capture the effects of rumours (SCHWERT, 1996) – and a period after the announcement – to observe the effect. CARs are calculated using the standard five-day (one week) and 20-day (one month) announcement windows. Performance estimates were calculated for 2270 deals using stock price data retrieved from Datastream. All CARs are winsorized to remove outliers.

Controls

A number of factors were controlled in the analysis of the way in which the euro has impacted the number, spread, size and performance of the deals in the sample.

Deal count and spread. To estimate the way in which the euro has impacted the number and spread of deals, the following were controlled for: (1) the overall increase in the number of M&As in the period of analysis (*Total*); and (2) year-specific effects (*Year*). In doing so, it is asked if the euro has had an impact on the number and spread of the deals announced, given that the number of deals generally increases year on year, but can vary above and below that trend in any specific year.

Deal size. To estimate the way in which the euro has impacted the size of the deals, the following were controlled for: (1) the levels of *Relatedness* between the target and the acquirer, using an indicator variable set equal to 1 if the target and acquirer share the same primary two-digit standard industrial classification

(SIC) code; (2) the degree of *Internationalisation*, using an indicator variable set equal to 1 if the target and acquirer are in different countries; (3) the *Acquirer’s Industry*; (4) an indicator if the deal was *Withdrawn* or completed; and (5) year-specific effects (*Year*). In doing so, it is asked if the euro has had an impact on the size of the deals, given that the levels of relatedness, internationalization and the willingness to complete impacts deal size, while allowing for industry-related and year-specific effects on deal value.

Deal performance. To estimate the way in which the euro has impacted the performance of the deal, the following were controlled for: (1) the levels of *Relatedness* between the target and the acquirer; (2) *Deal Value*, which was measured as the total consideration paid for the acquisition; (3) the degree of *Internationalisation*; (4) *Acquirer’s Size*, measured as the acquirer’s number of employees; (5) the *Target’s Public/Private* status, which was identified with an indicator variable, set equal to 1 if the target is public; (6) *Acquirer’s Leverage*, which was computed by dividing acquirer total debt by acquirer total assets; (7) *Acquirer’s Prior Performance*, which was computed by subtracting the median industry return on assets (ROA) value from firm-level ROA measured at the end of the year before an acquisition year; (8) *Acquirer’s Market-to-Book Ratio*, which was computed as a ratio of the acquirer’s market to book values; and (9) *Withdrawn* deals, which was identified using an indicator variable set equal to 1 if the deal was not completed, or otherwise unsuccessful. Finally, the following was controlled for: (10) *Industry*; and (11) year-specific effects (*Time*). The data necessary to construct all these variables are available from Thomson Reuters SDC and/or Datastream. In doing so, it is asked if the euro has had an impact on the performance of the deal, accounting for the standard set of firm- and deal-level control variables described in the literature.

RESULTS

More deals ...

To consider if the euro has impacted the number of deals in the European region at the country level, a number of regression models are estimated. Table 1 reports results.

Model 1 reports that the euro has positively and significantly increased the number of deals in those countries that joined the Eurozone in 1999. Models 2–5 report that countries that subsequently joined the Eurozone, in 2001, 2007, 2008 and 2011, also enjoyed a positive and significant increase in the number of deals. In other words, it is found that the euro increased the number of deals. Interestingly, Model 6 reports that the euro has had a negative effect on the number of acquisitions in those European countries that remained outside the euro. The precise

Table 1. Results of ordinary least squares (OLS) analysis: impact of the euro on the number of deals

Variables	Model 1 <i>Deals_EU99</i>	Model 2 <i>Deals_EU01</i>	Model 3 <i>Deals_EU07</i>	Model 4 <i>Deals_EU08</i>	Model 5 <i>Deals_EU11</i>	Model 6 <i>Deals_NonEuro</i>
<i>EURO</i>	48.91*** (1.034)	54.23*** (1.038)	55.45*** (1.048)	57.74*** (1.045)	57.92*** (1.049)	-31.30*** (1.646)
<i>Total</i>	2.865*** (0.0171)	2.910*** (0.0171)	2.931*** (0.0173)	2.919*** (0.0173)	2.933*** (0.0173)	4.816*** (0.0272)
<i>Year</i>	-1.871*** (0.103)	-1.943*** (0.104)	-1.939*** (0.105)	-1.950*** (0.104)	-1.968*** (0.105)	-4.303*** (0.164)
Constant	15.52*** (1.213)	15.38*** (1.217)	14.53*** (1.229)	15.09*** (1.226)	15.09*** (1.231)	144.2*** (1.930)
Number of observations	19362	19362	19362	19362	19362	19362
R^2	0.754	0.764	0.764	0.767	0.767	0.686

Notes: Robust standard errors are given in parentheses.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

reasoning for why this might be the case requires further research. It is conceivable, however, that acquirers have preferred to remain within the Eurozone and have increasingly substituted Eurozone targets for non-Eurozone targets since the introduction of the single currency.

A wider spread of deals ...

To consider if and how the euro has altered the spread of European deals concluded at a regional and city level, a number of visual and empirical tools were used.

First and calculating the kilometre distance between two points using the haversine formula, spread was considered in terms of the distance between the target and acquirer.

The average distance between the two firms, on an annual basis, was calculated for the period 1990–2010. It was found that, prior to 1999, the average distance between the target and acquirer was 475 km (295 miles), but that after 1999 the average increased to 595 km (369 miles). The difference between the two

periods is statistically significant. Fig. 1 plots the result and reports the average distances between the target and the acquirer, pre- and post-euro. Both series are overlaid with a trend line. To test if the euro has had a role in this, a number of ordinary least squares (OLS) regressions were estimated. Using a dummy variable – which distinguishes between deals before and after the euro – on the number of deals announced in the Eurozone, controlling for the total rise in activity (*Total*) and year-specific effects (*Year*), the results⁴ suggest that the euro has positively impacted distance between firms. For example, *EURO_99*: $\beta = 0.00152$, $p = 0.000$, $t = 8.39$, $r^2 = 0.32.9$. Thus, it can be concluded that the euro has significantly altered the spread of deals in terms of the physical distance between target and acquirer.

Next and having matching mergers to regions and having distinguished core regions from peripheral regions, the spread is considered in terms of the regional location of activity.

Fig. 2 reports how the spread and density of acquisitions has changed over the period. Fig. 2(a) reports

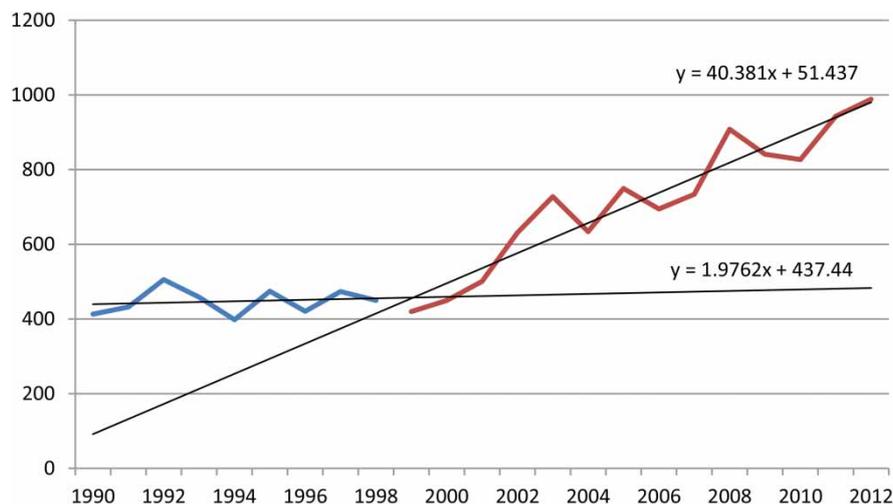


Fig. 1. Average distance between the target and acquirer, 1990–2012

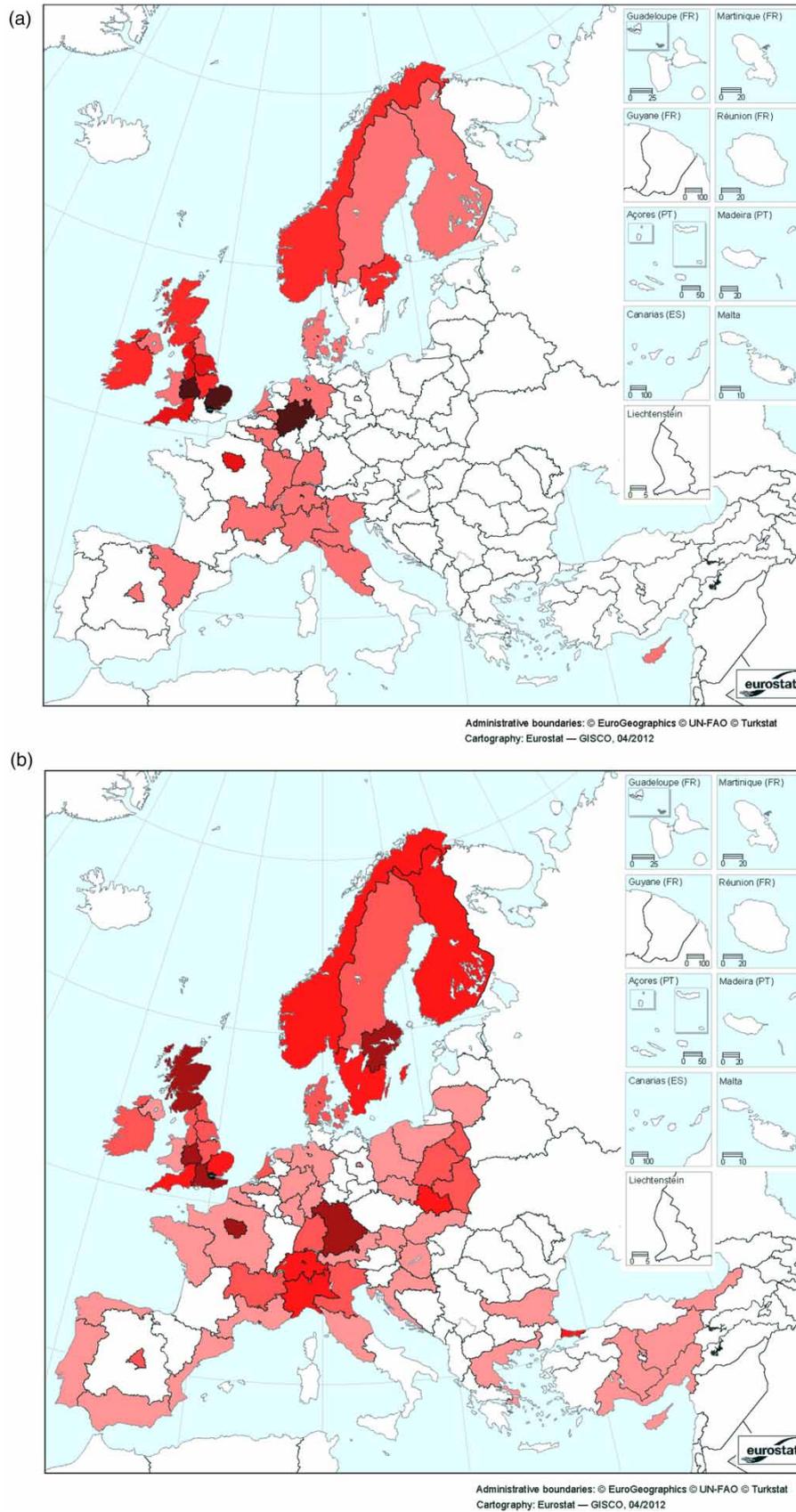


Fig. 2. (a) Target spread and density, 1990; and (b) target spread and density, 2012

the spread and density of acquisitions, at the NUTS-1 level, in 1990 and Fig. 2(b) reports the situation in 2012. The change in Fig. 2 demonstrates: (1) the rise in the number of acquisitions on the periphery of the Iberian Peninsula; (2) the increasing spread of acquisitions along the coast of the Western Mediterranean; (3) the emergence of an acquisitions market in Greece, Turkey and Cyprus in the Eastern Mediterranean; (4) the emergence of an acquisitions market in Croatia, Bulgaria, Lithuania, Slovenia and Poland in Eastern Europe; (5) the strengthening of the acquisitions market in the German Ruhr and mountains; (6) the

emergence of an Austrian acquisitions market; (7) the westward march of acquisitions in France; and (8) the increasing use of acquisition in Scandinavia and the British Isles. In other words, Fig. 2 demonstrates that the number of regions involved in deal-making has grown.

Fig. 3 complements this by demonstrating how the linkage between regions has changed over time. Using a simple technique from social network analysis (DE NOOY *et al.* 2005), Fig. 3(a) reports on the major acquisition centres in 1990, at the NUTS-1 level and the linkages between these centres, and Fig. 3(b)

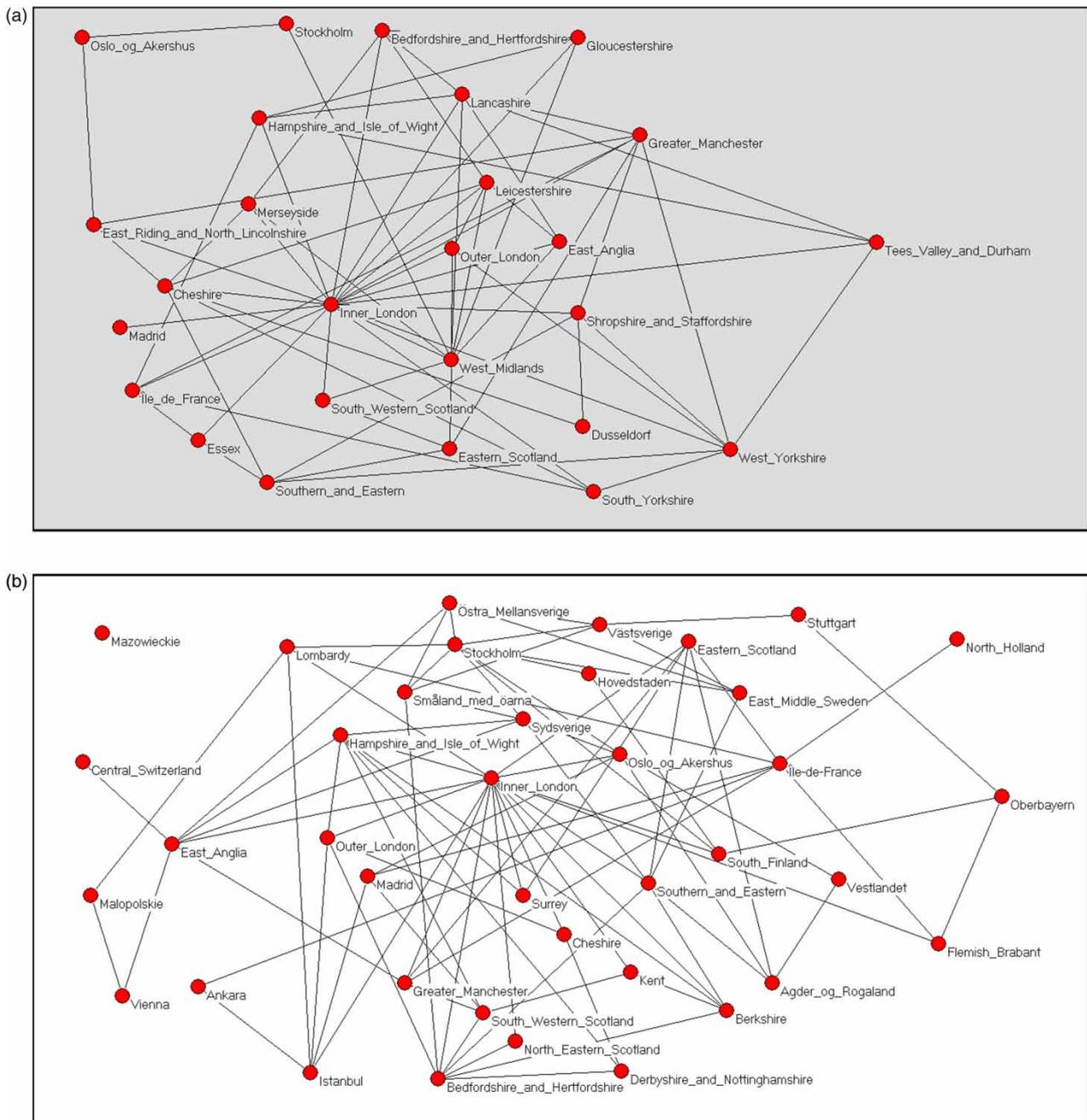


Fig. 3. Economic linkages between regions: (a) economic linkages between regions, 1990; and (b) economic linkages between regions, 2012

reports on the same situation in 2012. In both cases, only regions with five or more deals per year are represented. The lines between regions demonstrate inter-regional acquisitions and a disconnected region suggests that the deals in that region were either within the same region or to a region where acquisition activity is below the threshold. Fig. 3 indicates two things. Firstly, it shows that while the majority of intra-European acquisitions in 1990 involved British acquisition centres, a far more balanced set of acquisition centres had emerged in 2012. Secondly and comparing the numbers behind the two graphs,⁵ it can be seen that: (1) the number of NUTS regions satisfying the minimum conditions to be represented has increased over the period (from 98 to 167); (2) the density of the network – that is, the proportion of possible relations in the network that are actually present – has declined (from 0.021 to 0.013); and (3) the levels of reciprocity – that is, the proportion of relations that are bidirectional – has increased (from 0.0714 to 0.0733). In other words, Fig. 3 suggests that the European acquisitions market has broadened over the period to include more regions.

To test if the euro has impacted all regions equally, core and peripheral regions are distinguished and a number of regression models are estimated. Table 2 reports results.

Firstly and defining regions with population densities below the European mean as peripheral and those above the mean as core, Models 7 and 8 consider how the euro has altered the spread across the regions core and periphery. Model 7 reports that the euro has positively and significantly increased the number of deals announced in peripheral regions, with population densities below the European mean; and Model 8 reports that the euro has negatively and significantly impacted the number of deals announced in the core, with population densities above the European mean. In other words, it can be seen that the euro has led to more deals in the periphery and to fewer announcements in the core.

Next, the population density distribution is split into quartiles instead of halves in order to provide a sharper understanding of the change in spread. Model 9 reports that the euro has positively and significantly impacted the number of deals in the most peripheral regions – that is, those in the first quartile; and Model 10 reports a similar case for those in the second most peripheral regions (second quartile). Model 12 reports that the euro has positively and significantly impacted the number of deals announced in the most core regions (fourth quartile); but Model 11 reports that the euro has negatively and significantly impacted the number of deals concluded in regions included in the second most core regions (third quartile). In other words, it can be seen that the euro has not only led to more deals in peripheral regions – such as Åland (FI20) and Picardie (FR22) – but also has led to an increase in deals in the extreme core – such as Brussels (BE10) and Vienna (AT13). Only the second most core regions, such as Calabria (ITF6), Devon (UKK4) and Freiburg (DE13), have seen a decline in the number of deals made.

Taken together, these results support the suggestion that the euro has increased the spread of inter-European deal-making, in both distance and choice of destination.

Bigger deals ...

To consider if the euro has impacted the size, or financial value of deals announced, at the country level, a number of regression models are estimated. Table 3 reports results. Model 13 reports that the euro has a direct positive and significant effect on the size of the deals. Model 14 reports that the effect is stronger if the acquirer is from one of the countries that joined the Eurozone in 1999 – that is, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain; and Model 15 reports that the effect is stronger still if the target is from one of the countries that joined the Eurozone in

Table 2. Results of ordinary least squares (OLS) analysis: impact of the euro on the spread of deals

Variables	Model 7 <i>Deals_H1</i>	Model 8 <i>Deals_H1</i>	Model 9 <i>Deals_Q1</i>	Model 10 <i>Deals_Q2</i>	Model 11 <i>Deals_Q3</i>	Model 12 <i>Deals_Q4</i>
<i>EURO</i>	0.054*** (0.007)	-0.054*** (0.007)	2.312*** (0.066)	1.710*** (0.231)	-1.270*** (0.228)	19.33*** (5.312)
<i>Total</i>	-0.000*** (0.000)	0.000*** (0.000)	0.075*** (0.001)	0.084*** (0.003)	0.209*** (0.003)	2.823*** (0.087)
<i>Year</i>	0.002*** (0.000)	-0.002*** (0.000)	-0.228*** (0.006)	-0.229*** (0.023)	0.016 (0.022)	-26.271*** (0.530)
Constant	0.114*** (0.008)	0.879*** (0.008)	0.308*** (0.078)	2.214*** (0.271)	1.572*** (0.267)	97.851*** (6.230)
Number of observations	19362	19362	19362	19362	19362	19362
<i>R</i> ²	0.004	0.003	0.427	0.059	0.175	0.183

Notes: Robust standard errors are given in parentheses.
****p* < 0.01; ***p* < 0.05; **p* < 0.1.

Table 3. Results of ordinary least squares (OLS) analysis: impact of the euro on the deal values

Variables	Model 13 DEAL (\$)	Model 14 DEAL (\$)	Model 15 DEAL (\$)
<i>EURO</i>	223.232*** (39.36)	136.658*** (45.72)	67.914** (26.83)
<i>EURO#Acq_EURO_99</i>		357.411*** (90.44)	
<i>Acq_EURO_99</i>		11.763 (45.20)	
<i>EURO#Tar_EURO_99</i>			582.635*** (137.72)
<i>Tar_EURO_99</i>			-58.714 (46.02)
<i>Related Acquisition</i>	235.155*** (79.64)	239.557*** (79.30)	248.549*** (81.86)
<i>International</i>	232.765*** (84.47)	188.097** (92.43)	121.318 (73.85)
<i>Acquirer Industry</i>	-0.062*** (0.01)	-0.056*** (0.01)	-0.056*** (0.01)
<i>Withdrawn</i>	3649.421*** (771.81)	3530.842*** (761.99)	3549.958*** (765.31)
<i>Year</i>	9.461 (9.42)	6.439 (9.95)	5.401 (8.84)
Constant	230.098** (103.80)	231.090** (100.88)	265.211*** (95.15)
Number of observations	19315	19315	19315
R ²	0.03	0.03	0.03

Notes: Robust standard errors are given in parentheses.
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

1999. Similar results are generated (but not reported) for countries that joined the Eurozone at a later date.⁶ Taken together, it can be concluded that the euro has had a positive and significant effect on regional deal values.

... and better performing deals

Finally, to consider if the euro has impacted the performance of deals announced in the region, a number of regression models is estimated. Table 4 reports the results. The relatively low R^2 's are typical of CAR-based studies (MARTYNOVA and RENNEBOOG, 2008).

Model 16 presents the base model specification. To this specification, Models 17 and 18 add the euro dummy variable. For comparison, Model 17 employs a CAR5 performance measure and Model 18 employs a CAR20 performance window. In both, the euro has a positive and significant impact on the performance of the deal. Model 19 suggests that performance is not further improved if the acquirer is from one of the countries that joined the euro in 1999. Model 20 shows, however, that deal performance is significantly improved if the target is from one of the countries that joined the Eurozone in 1999. Similar results are generated for countries that joined the euro at a later stage.⁷ Together, these results support the suggestion that the euro has improved performance.

Fig. 4 plots the average performance of the Eurozone and non-Eurozone acquisitions in the period of analysis. It shows that, relative to those outside the Eurozone, Eurozone acquirers tend to have enjoyed more stable performance throughout the period. In the Eurozone, the positive performance exhibited in the good times is not as high as it is for those outside the Eurozone, but in the bad it is not as low. Explaining this observation goes beyond the scope of this paper. Differences in national culture, for example, may make some nations more prone to the extremes. It is tempting, however, to suggest that the euro may be responsible for this observation, insofar as a levelling of the playing field may have increased transparency and certainty and lessened the extremes observed outside the Eurozone. Further research is required, however.

DISCUSSION AND CONCLUSIONS

The purpose of this paper is to explore systematically if, how and in what way the euro has impacted the decision of one firm to acquire another. The results show that the euro has changed behaviour and that it has changed it for the better. The following are found:

- The euro has significantly increased the number of deals announced. This finding supports the suggestion that policy impacts firm geography and the suggestion

Table 4. Results of ordinary least squares (OLS) analysis: impact of the euro on deal performance

Variables	Model 16 CAR5	Model 17 CAR5	Model 18 CAR20	Model 19 CAR20	Model 20 CAR20
<i>EURO</i>		0.013*** (0.004)	0.022*** (0.006)	0.0243** (0.009)	0.012*** (0.008)
<i>EURO#Acq_EURO_99</i>				-0.002 (0.012)	
<i>Acq_EURO_99</i>				0.011 (0.010)	
<i>EURO#Tar_EURO_99</i>					0.019** (0.011)
<i>Tar_EURO_99</i>					-0.009 (0.009)
<i>Related Acquisition</i>	-0.002 (0.006)	-0.006* (0.003)	-0.001 (0.006)	-0.001 (0.006)	-0.001 (0.006)
<i>Deal Size</i>	-0.000** (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)
<i>International</i>	-0.010** (0.005)	-0.010*** (0.003)	-0.012** (0.005)	-0.013** (0.005)	-0.011** (0.005)
<i>Acquirer's Size</i>	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
<i>Public</i>	-0.002 (0.006)	-0.005 (0.004)	-0.000 (0.006)	-0.001 (0.006)	-0.001 (0.006)
<i>Acquirer's Leverage</i>	-0.024 (0.019)	-0.038*** (0.013)	-0.025 (0.019)	-0.026 (0.020)	-0.026 (0.019)
<i>Acquirer's Performance</i>	-0.001** (0.000)	-0.000 (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.000)
<i>Acquirer's Market-to-Book Ratio</i>	0.001 (0.002)	0.000 (0.001)	0.000 (0.003)	0.000 (0.003)	0.000 (0.003)
<i>Acquirer's Industry</i>	-0.000 (0.000)	-0.000* (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)
<i>Withdrawn</i>	-0.009 (0.014)	-0.012 (0.007)	-0.010 (0.014)	-0.010 (0.014)	-0.011 (0.014)
<i>Year</i>	-0.001 (0.000)	0.000 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
Constant	0.035 (0.023)	0.024* (0.013)	0.029 (0.022)	0.023 (0.024)	0.033 (0.022)
Number of observations	2270	2270	2270	2270	2270
R ²	0.020	0.030	0.035	0.027	0.027

Notes: Robust standard errors are given in parentheses.
 *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

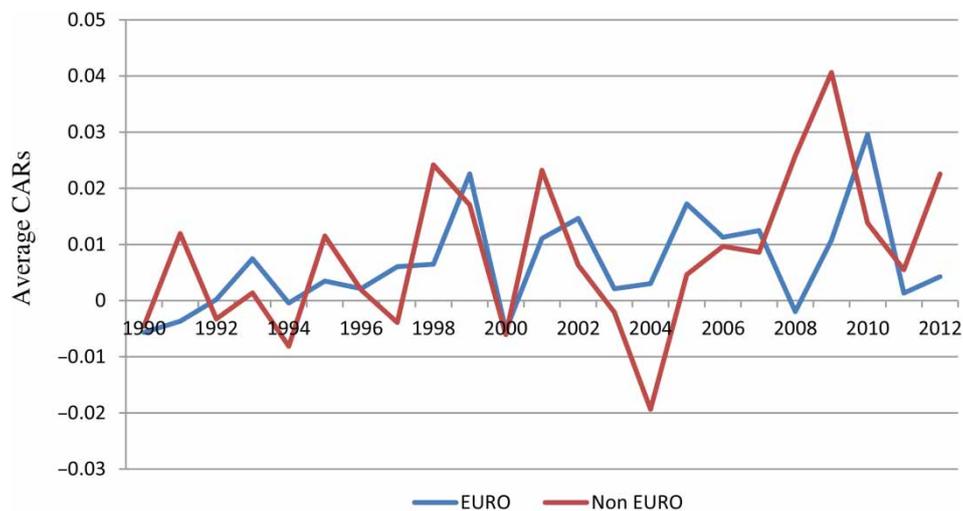


Fig. 4. The euro and its performance

that the euro bolstered the levels of deal-making in the Eurozone (e.g., BLANCO, 2001; SUDARSANAM, 2003; BJORVATN, 2004; MANCHIN, 2004; CAMPA and HERNANDO, 2005; MOSCHIERI and CAMPA, 2009; COEURDACIER *et al.*, 2009; EKKAYOKKAYA *et al.*, 2009). Interestingly, however, it is found that while the euro has had a positive impact on the number of deals announced within the Eurozone, it has had a directly negative impact on the number of deals announced in European countries outside the Eurozone. Further research is required, but this finding hints at a possible substitution effect, whereby the euro has led acquirers, *ceteris paribus*, to prefer Eurozone targets to non-Eurozone targets. This finding supports TAYLOR's (2008) descriptive suggestions that the euro has increased the level of intra-Eurozone trade and has disadvantaged those that have remained outside. From a policy perspective such a finding is significant.

- *The euro has significantly increased the spread of deals that are made.* Looking at the geography of the deals announced, it is shown that there are more regions involved in M&As today than in any previous time and that there are more continental European acquisition centres than in any previous time. Looking at the euro's role in this, it is shown that the euro has increased the willingness of acquirers to make: (1) distant acquisitions; and (2) acquisitions in the periphery, often at the expense of those in the core. The implication here is that the euro and the single market have brought peripheral and distant targets to the attention of those in the core. These findings support and build upon ALLEN and SONG's (2005) suggestion that the euro has increased the levels of integration within the Eurozone and, from a policy perspective, it is shown that the euro has made the European market for corporate control more inclusive.
- *The euro has led to an inflation in deal values.* It is found that the euro has a positive impact on the values of the deals announced within the Eurozone. The authors support, therefore, the broader studies of MANCHIN (2004) and COEURDACIER *et al.* (2009). This is interesting, insofar as it matches with ALLEN and SONG (2005) and EKKAYOKKAYA *et al.*'s (2009) suggestion that the euro has increased the levels of competition in the European market for corporate control. Their suggestion is that in a more homogenous market, like the Eurozone – free from currency-related distortions and transaction costs – firms will spot the same opportunities, and in competing for these opportunities deal prices will be driven up. Because deal values negatively impact performance, however, this inflationary effect of the euro is somewhat worrying.
- *The euro has improved performance.* Looking at the performance of the deals in the sample, it is shown that the euro has positively and significantly increased

performance, especially in the case of acquisitions involving Eurozone targets. This is interesting for a number of reasons. Firstly, the findings are contrary to those of EKKAYOKKAYA *et al.* (2009). Their study of banking mergers finds that bidders' gains have fallen with the development of economic and monetary union, but the present broader study suggests that the average impact across all industries is positive. Secondly, it is interesting to observe that performance has increased, in spite of the fact that deal sizes, the levels of premiums paid (EKKAYOKKAYA *et al.*, 2009) and the levels of competition (ALLEN and SONG, 2005) for a target have increased. Together, these factors should erode the level of the abnormal returns accruing to the acquiring firms. The fact that bidder returns are still positive suggests that the reduction in transaction costs, etc., implied by membership of the single currency trumps the rise in competition, etc., implied by a single market. In other words, the benefits of the euro appear to outweigh the costs and so the suggestion is that the euro and the creation of the Eurozone has increased overall market efficiency.

Limitations and future research

As with all studies, the findings are subject to a number of important limitations, which, in themselves, suggest a number of interesting future research questions. Firstly, only the behaviour of 100% acquisitions, for US\$10 million and above, is considered. These restrictions are imposed so as to exclude smaller deals and partial acquisitions, which are known to behave differently. It is hoped that future researchers will explore the impact of the euro on the behaviour of smaller and partial acquisitions, which, of course, constitute the majority of the region's deals. Secondly, only the behaviour of European acquirers for European targets is considered. 'European' is defined quite broadly, but this study is limited insofar as it does not consider the impact of the euro on behaviour of non-European acquirers, or on the impact of European acquirers making non-European acquisitions. It is hoped future researchers will explore the interplay between European and non-European dealmakers. Thirdly, the paper does not distinguish between first-time international acquirers and serial acquirers, which, according to REUER *et al.* (2003), demonstrate distinct behaviour differences, or between industry types, which, according to RODRIGUEZ-POSE and ZADEMACH (2006), display different acquisition tendencies. It is hoped that future researchers investigate if the effects described here vary per firm or deal type. Finally, it is not considered how home and host-country effects impact performance, which MAKINO *et al.* (2004) suggest are as strong as industry effects in explaining performance. It is hoped that future researchers will build upon the present work to

consider the performance impact of country-based locational effects in this dynamic.

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NOTES

1. Denmark and the UK negotiated an opt-out in 1992; Sweden voted against the euro in 2003.
2. A premium is a sum paid to the target in addition its market value.
3. The authors thank an anonymous reviewer for this point.
4. Available from the authors upon request.
5. Available from the authors upon request.
6. Available from the authors upon request.
7. Available from the authors upon request.

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