# EUROPEAN ECONOMY

## The Economic Impact of Late Payments

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## Abstract

Delays in payments in Business to Business (B2B) and Government to Business (G2B) transactions generally have an adverse effect on the cash-flow of firm and can cause firms, particularly small ones, to seek extensions of their overdraft facilities and increase their borrowing. Late payment of commercial debt can play a significant role in the survival of firms as their liquidity can be severely affected, even forcing some firms to exit the market. This has been particularly important during the economic and financial crisis as access to credit has been more restricted.
This note addresses the economic effect of late payments by approximating the possible financial cost for firms and by estimating the empirical link between late payments and the exit rate of firms. Both payment delays in G2B and B2B transactions are considered. The note focuses on four EU countries where late payments are a serious problem (Italy, Spain, Portugal and Greece), but the econometric analysis linking late payments with exit rates uses a broader set of Member States and thus the results can be easily extended to other countries.
This work was carried out in the context of an ECFIN project which main findings are presented in the report: European Commission (2014) "Market reforms at work in Italy, Spain, Portugal and Greece", European Economy 5|2014

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# ABSTRACT

Delays in payments in Business to Business (B2B) and Government to Business (G2B) transactions generally have an adverse effect on a firm's cash-flow and can cause firms, particularly small firms, to have to extend their overdraft facilities and borrowing. Late payment of commercial debt could play a significant role in the survival of firms as their liquidity could be severely affected, even forcing some firms to exit the market. This is particularly important during the economic and financial crisis as access to credit is more restricted.

This note addresses the economic effect of late payments by approximating the possible financial cost for firms and by estimating the empirical link between late payments and firm exit rates. Both payment delays in G2B and B2B transactions are considered. The note focuses on four EU countries where late payments are a serious problem (Italy, Spain, Portugal and Greece), but the econometric analysis linking late payments with exit rates uses a broader set of Member States and thus the results can be easily extended to other countries.

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# I. INTRODUCTION

This note addresses the problem that firms face in some European countries regarding delays in payments in Business to Business (B2B) and Government to Business (G2B) transactions. To the best of our knowledge, analyses trying to quantify the economic cost of this phenomenon are very limited. Building on the limited existing literature, this document estimates the economic effects of late payments, i.e. payments made after the agreed or laid down trade credit period, with particular attention to member states where this is a particularly acute issue, namely Italy, Spain, Portugal and Greece.

The importance of trade credits, i.e. sellers accepting payment after the delivery of goods and services, has increased during the economic and financial crisis. Following needs of restoring balance sheets due to the financial crisis, the problem of late payments has become more urgent. Indeed data for ES, IT, PT and EL shows that both business and government late payments increased in the four countries since the beginning of the crisis. This is particularly important for smaller and medium enterprises as SMEs are particularly exposed to Late Payments. The rationale behind is that late payments affects negatively cash flows, adds financial costs as well as increase the uncertainty for many creditors. This is particularly important in firms, in particular SMEs, where access to finance is limited and expensive. In addition, SMEs do not always have appropriate credit management systems for preventing or managing late payments. ($^1$) In general, the proportion of firms identifying late payments as a barrier increases the smaller the firm considered with 47% of micro firms and 35% big firms identifying late problem as a barrier. ($^2$)

Late payments can give rise to tighter financial conditions, leading to increased administrative and financial costs as external financing may be necessary in order to manage cash flows. Hence, late payments can give rise to insolvency and ultimately bankruptcy, which means that firms cease to exist or in other words, exit the market. This effect is clear in the case of government to business payments (often credit-constrained SMEs that are involuntarily lending to the authorities). The net effect of late payments on B2B transactions is, a priori, less intuitive given that it has a negative effect on creditors but a positive on debtors. In this case, the answer is an empirical question. Data on late payments suggest that this is more problematic (i.e. more delays) in G2B transactions than in transactions between private enterprises.

This paper assesses the cost that late payments – both G2B and B2B– have on firms. It does it by estimating the implicit financial cost it imposes as well as the effect on firms' death by pushing them out of business. The effect on exit rates is estimated using a panel dataset for 17 Member States. There may be other economic effects from late payments that are not covered here: for example, when late payments by public administration becomes the norm, firms may feel discourage and decide not to do business with public bodies; thus reducing the average time of payment can increase the number of participants in tenders and competition among participants, which can in turn translate into savings for the administration. Late payments was identified as a main barrier to companies in public procurement with 38% of responding companies identifying late payments as a main obstacle. ($^3$)

The remainder of this note is organised as follows. Section 2 provides an overview of the main reforms aiming at reducing late payments in European Union and the countries under analysis and it describes the size and scope of late payments across EU Member States. Section 3 is devoted to a description of the data and the methodology used to estimate the financial costs of late payments for firms. Section 4 estimates the effects of late payments on EU firms' exit rates using a panel data technique and presents and discuss the results. Section 5 concludes.

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($^1$) Source: SAFE survey

($^2$) "Evaluation of SMEs' access to public procurement markets in the EU (2010). DG Enterprise and Industry

($^3$) "Evaluation of SMEs' access to public procurement markets in the EU (2010). DG Enterprise and Industry

# II. LATE PAYMENTS: DURACTION AND DELAY ACROSS COUNTRIES

When describing the issue of late payments, the difference between two related concepts need to be taken into account: payment duration and payment delay. The former refers to the effective actual duration in payment incurred by the different public and private agents; the latter refers to the delay which is obtained as the difference between duration and the agreed contractual terms. Payment duration thus reflects contractual terms plus payment delay. EU legislation contains guideless on both. See Box II.1 for a description of the latest EU legislation on the topic of late payments and a brief introduction to the transposition on a selected number of Member States.

Two indicators associated with late payments are used next to describe the situation across EU countries: duration of payments and delays. Duration is the effective average duration in days incurred by the different public and private agents. Delay is calculated over contractual terms and it is understood as the absolute delay in days in relation to the agreed payment terms. The indicators are collected by Intrum Justitia based on surveys that cover almost 10,000 firms from all size class. ([4]) This section describes the two indicators across countries and over time for selected countries.

Graph II.1 (for G2B) and Graph II.3 (for B2B) show the duration in days incurred by agents and the delay in days in relation to the agreed contractual terms. Since the duration indicator is defined as contractual terms plus delay, the two indicators can be expected to be correlated.

A first observation emerging from Graph II.1 suggests indeed a positive correlation across countries: large delays are not offset by short contractual terms. The figure also shows the heterogeneous situation across Member States. Concerning G2B transactions Italy, Greece, Spain and Portugal perform worse than the other European countries in terms both of average payment duration and delays. Public authorities in countries such as Finland, Estonia, Sweden,

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([4]) European Payment Index. Intrum Justitia. This indicator might differ from similar ones computed at a national level. The main advantage of the indicator collected by Intrum Justitia is that it provides an indicator with a cross-country comparability.

Denmark and Germany are doing better than their European counterparts.

Graph II.1:  **Average payment duration and delay in G2B transactions (2013)**
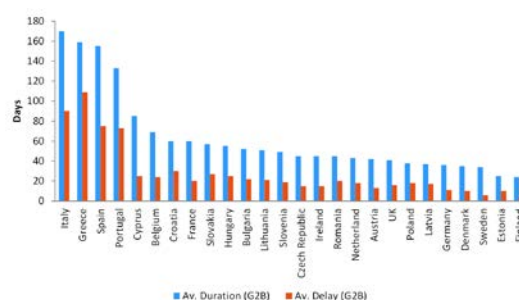


*Source:* Intrum Justitia (Survey conducted between January and March 2013)

Graph II.2:  **Evolution of Government Late Payments (delays)**
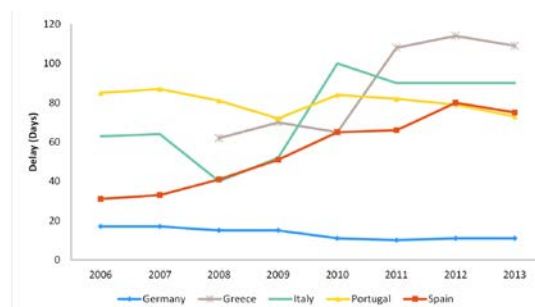


*Source:* Intrum Justitia

Graph II.2 displays the evolution of G2B delay indicator for the worst performing countries, with Germany included as a benchmark. The effect of the crisis on late payments is clearly observed in Spain, Greece and Italy. In the case of Germany however, payment delays by the administration have been declining over time despite the crisis. A similar picture emerges when looking at transactions between private enterprises. Graph II.3 shows that the worst performing countries in terms of average duration and delay are Italy, Cyprus, Spain, Portugal and Greece; whereas, Finland, Romania, Germany, Austria and Denmark are the best performing countries. The problem has aggravated since the crisis in some of the worst performers (Spain, Italy, Greece) thought some improvement is observed in the last two years (see Graph II.4).

Graph II.3:   **Average payment duration and delay in B2B transactions (2013)**
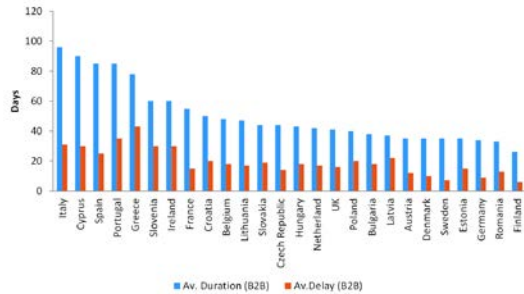


***Source:*** Intrum Justitia (Survey conducted between January and March 2013)

Graph II.4:   **Evolution of Business Late Payments (in days)**
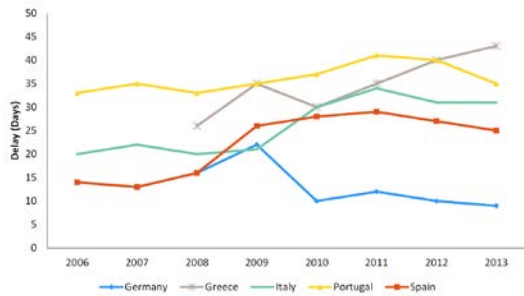


***Source:*** Intrum Justitia (Survey conducted in the first months of each year)

A comparison between G2B and B2B late payment indicators shows that in the large majority of countries where late payments is a problem in the public sector, its private counterpart also shows high levels of payment delays. However, in terms of delays G2B transactions show higher levels than transactions between private enterprises.

> ### Box II.1: Late payments in commercial transaction in the European Union
>
> At the EU level, the Directive 2011/7/EU aims at setting and harmonising the payment duration of transactions by public authorities to businesses as well as business-to-business. In terms of G2B transactions, the directive states that Member States have to pay for the goods and services they purchase within 30 calendar days following the receipt of the invoice. Moreover, where the date of receipt of the invoice is uncertain, national authorities must pay within 30 calendar days after the date of the receipt of the goods and services. Nevertheless, in some exceptional circumstances this deadline could be increased to 60 days. Some exceptions include public administrations carrying out economic activities of an industrial or commercial nature by offering goods or services on the market and which are subject to the transparency requirements laid down in EU regulation. In addition, public entities providing healthcare which are duly recognised for that purpose are also described as exceptions. In the case of B2B transactions, provision should be made to limit contractual payment periods to 60 calendar days. However, this 60 days limit could be expanded in circumstances in which undertakings require more extensive payment periods. For example, this is the case when one of the firms wishes to provide trade credit to their customers. The directive suggests that it should be possible for the parties to expressly agree on payment periods longer than 60 calendar days but these terms should not be considered as grossly unfair to the creditor.
>
> The Directive also has provisions concerning payment delays and sets monetary compensations for the costs associated with late payments. According to this directive, the interest rate for late payments in the Member States should be increased to at least 8 percentage points above the European Central Bank's reference. Public authorities are not allowed to fix an interest rate for late payment below this rate. Furthermore, enterprises are entitled to claim interest for the cost associated from late payments from debtors and it sets a minimum fixed sum of 40 euros in which a reminder is not needed. In addition, firms experiencing late payments can also claim reasonable compensation from the debtor for any recovery costs exceeding the fixed sum and incurred due to the debtor's late payments. The main example being expenses incurred by the creditor by instructing a lawyer or employing a debt collection agency.
>
> At a national level, Italy, Spain, Portugal and Greece have all introduced changes in their legislation respecting the transposition deadline of the 16th of March 2013, although with different degrees of ambition and completeness. In the case of Italy, the new rules began to apply to commercial transaction from the 1st of January 2013. Also in Spain the new provisions will only apply to contracts concluded after February 2013. In Portugal, some provisions of the decree law transposing the Directive seem not to be in line with the Directive, in particular in what concerns the limit of 60 calendar days for payments involving public entities providing healthcare that will not be fully applicable until the 31st of December 2015 (with the exception of payments to micro-corporations and small firms). Furthermore, in Greece the fully compliance with the directive has not been obtained yet as the transposition law does not guarantee that an enforceable title for unchallenged claims is obtained within 90 calendar days adding any procedural delays. In addition, a Greek national law, that is still in force, states that an enforceable title cannot be used against Greek State bodies and bodies governed by public law in Courts. This provision is subject of an open infringement since 2009 as it is not in line with the Directive. As previously mentioned, the Directive requirement that payment of invoices should be paid within 30 days in principle, or 60 days in exceptional cases is particularly challenging for the case of Greece as existing payment processes are extremely slow, encumbered by excessive layers of control and hampered by lack of automation. Among other actions, Greek authorities have adopted new measures that shifted the entire responsibility for payment execution from tax offices to the fiscal audit offices with the aim of initiating the streamlining of the current process.

# III. PROXYING SHORT TERM FINANCIAL COSTS ASSOCIATED WITH GOVERNMENT LATE PAYMENTS

How can the cost to firms associated with government late payments be approximated? A simplistic yet useful view would consider that firms need to compensate the lack of liquidity generated by payment delays. This would be the case if companies providing goods and services to the public administration are forced to turn to the financial market in order to respect their spending plans with the consequent financial costs. Or it could be seen as the opportunity cost of not investing and making a secure return for firms with enough liquidity to face the delay.

Extending the work done by Fioderlisi, Mare et al (2012) for the Italian economy, ([5]) an estimation of the *short-term*, financial cost is obtained by applying annual interest rates for loans to non-financial corporations to the claims against the public administration, calculated as the product of the average delay in years times the total expenditure on works, goods and services incurred by public authorities:
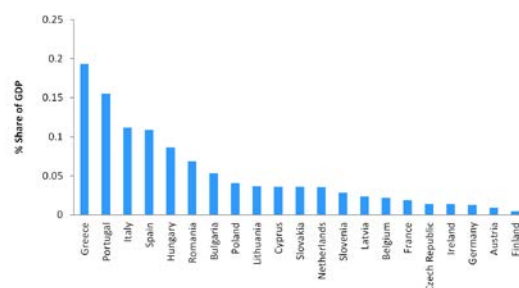
$$C = CV * i * delay$$

where "C" represents the estimated cost for firms; "*CV*" is the volume of claims against the public administration; ([6]) "*i*" is the average interest rate for loans to non-financial corporations; ([7]) and "*delay*" is the government average delay expressed as a fraction of a year.

There are of course some caveats behind this approach. Not all claims against the public administration have the same delay. Unless the distribution of the claims is independent of the distribution of the claims-delay, the differences in

delays lead to a bias in this calculation. This bias will represent an undervaluation if large claims have longer delays than the average-size claim. Payment delay is also more remarkable in some sectors than in others but unfortunately there is no sectoral data on late payments by the public administration. The same applies to the interest rate used in obtaining these financial costs. The interest rate to non-financial corporation does not make distinction between large and small firms. If we believe that the ability and the cost of obtaining credit is affected by the size of the firm, then the result obtained could be affected by the distribution of firms, in terms of size class, acting as creditors to the government.

Turning to the results, Graph III.1 depicts the estimated cost in 2012 expressed as a percentage of GDP, which ranges from 0.19% in Greece to 0.005% in Finland. ([8]) Graph III.2 shows the evolution since the starting of the crisis for the four worst performers and for Germany. The increasing trend experienced in Greece, Portugal, Spain and Italy contrasts with the German situation that shows decreasing costs for firms over time. The last year seems to have put a halt to the deterioration observed in Portugal, Italy and Greece.

(*) Calculated as the volume of claims against the public administration times the average payment delay times interest rates to non-financial corporations loans.
***Source:*** Own calculations based on Intrum Justitia and Eurostat

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([5]) Mare. D. et al (2012).
([6]) The total volume of claims against the public administration is derived from ESA 95 data for National Accounts. It is obtained from the sum of the aggregate P2 (intermediate consumption), P51 (Gross fixed capital formation) and D6311_D63121_D63121PAY (social transfers in kind related to expenditure on products supplied to households via market producers, payable) for S.13 (general government sector). Note that the volume of claims is measured as a flow variable. However, by multiplying the claims times the average delay it is possible to obtain the average debt originated from the payment delay. Source: Eurostat.
([7]) Interest rate to non-financial corporations with maturity of less than 1 year. Source: Eurostat

([8]) 2012 is the latest year for which public expenditure was available.

Graph III.2: **Financial cost from government late payments as a share of GDP(*)**



(*)Calculated as the volume of claims against the public administration times the average payment delay times interest rate for loans to non-financial corporations
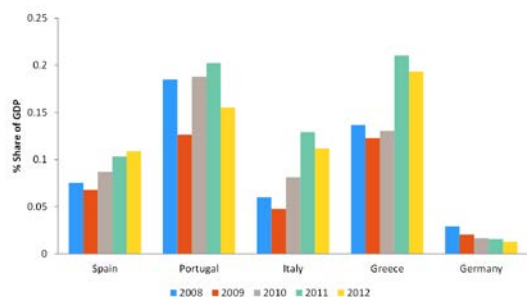*Source:* Own calculations based on Intrum Justitia and Eurostat

Graph III.3: **Decomposition of the short-term financial costs due to Government late payments (2008-2012)**



*Source:* Own calculations based on Intrum Justitia and Eurostat

Graph III.4: **Decomposition of the short-term financial costs due to Government Late Payments (2011-2012)**



*Source:* Own calculations based on Intrum Justitia and Eurostat

The previous graphs have shown financial costs as a share of GDP as to make it comparable across Member States. Therefore, the evolution of these shares is not only affected by the changes in financial costs but also by changes in GDP. In what follows, however only the contribution of the three components of financial cost is analysed thus abstracting from the GDP evolution.

Differences across countries are driven by delays in payments, interest rates applied by banks and the total expenditure on works, goods and services incurred by public authorities. Graph III.3 shows the growth rate between 2008 and 2012 of the different components for the same 5 countries (worst performers and Germany) and shows that for Spain, Italy and Greece, the increase in the estimated cost is due to the increase in the average delay of payments made by public administrations that more than offset the positive contribution of the decreasing interest rates in Italy and Spain (slightly increasing in Greece) and the contraction of public expenditure.

Graph III.4 presents the same information for the period between 2011 to 2012 and reveals that the improvement observed is mainly due to lower interest rates in Italy, Greece, Portugal and Germany and a contraction in the expenditure incurred by public authorities in all countries. Only Portugal shows a decreased in payment delays while in Spain delays keep increasing.
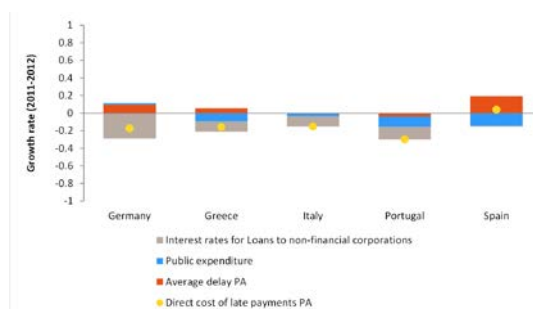
# IV. LATE PAYMENTS AND BUSINESS DYNAMICS: EFFECTS ON FIRM EXIT RATE

The previous section looked at the short term, financial cost to firms of late payments by the public administration. This section takes one step further and estimates the impact that liquidity constraints associated with late payments may have on firms by putting them out of business. It does so by looking at the effect on exit rates of delay of payments both by the public and private sector. In what follows, late payments are thus measured as the absolute duration of delay in days in relation to the agreed payment terms. The focus on delays as explanatory variable implies that the impact on exit mainly arises from the unpredicted changes in payment duration, as contractual terms, the other component, are known to the firm. In other words, this estimation assumes that firms predict to get paid according to their contractual terms and any payment made after the agreed terms are treated as unexpected delay. The estimations using duration instead of delay (not reported) show qualitatively similar results and are available upon request.

## IV.1. DATA AND METHODOLOGICAL APPROACH

To estimate the effect of late payments on firm exit rates a panel of annual data for 2005-2010 for 17 EU Member States and 9 sectors is used. ([9]) 2010 was chosen as it is the latest year for which firm demographic variables were available. Though this note focuses on reforms in Italy, Spain, Portugal and Greece, the econometric analysis is done using data for a wider sample of EU countries, namely Austria, Belgium, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Hungary, Italy, Netherlands, Poland, Portugal, Sweden, Slovakia and United Kingdom. The estimated elasticities refer thus to average EU effects.

Regressions are run separately for the effects on firms' exit rates of payments delay in G2B and

B2B transactions as it could be argued that late payments by the private sector are not independent from late payments by the public sector. Nevertheless, we are aware of the potential bias incurred by trying to explain firm exit rates by late payment in the private sector without taking that into account. This follows the idea that the effect on private firms of late payments by the public administration could create spillovers to other private firms in the form of late payments in B2B transactions. There is also a difference regarding the size of firm that engage in each type of transaction. On the one hand, in transactions between national authorities and private firms, large firms are normally over represented. On the other hand, operations between private firms are more likely to affect SMEs, and consequently firms which are more likely to experience closure. Information regarding the representation of SMEs in Business to Business transactions is lacking. However, in the period 2006-2008, 66% of the total value of contracts awarded by public procurement were awarded to large firms. Micro and small firms represented 34% of the total value of contracts awarded. ([10])

In addition, note that the expected sign of the effect of business delays is not as straightforward as in the case of public administration due to the fact that private transactions involve two agents, one acting as a creditor and a second acting as a debtor. A positive sign would be expected if for example, SMEs fall into the category of creditors and bigger firms act as debtors. The rationale behind being that the issue of late payments is more likely to represent a larger share of turnover for SMEs and these are more vulnerable to liquidity problems due to less access to credit. Indeed the results suggest that late payments cause a financial burden to firms which can consequently force firms to exit the market.

Following previous literature on determinants of exit rates, ([11]) additional explanatory variables considered are investment per person employed and the average size of firms. These variables

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([9]) Countries coverage determined by data availability. Sectors covered are (Nace rev.1): C (mining and quarrying), D (manufacturing), E (electricity, gas and water supply), F (construction), G ( wholesale and retail trade),  H (hotels and restaurants), I (transport, storage and communications), K (real estate, renting and business activities), Q (Human health and social work activities).

([10]) Source: Evaluation of SME's access to public procurement markets in the EU. DG Enterprise and Industry.
([11]) Miguel C. Manjon-Antolin (2010), Fotopoulos and Spence (1998), Dunne and Roberts (1991) and Kleijweg and Lever (1996).

could be seen as capturing "sunk cost" to exit in the sense that the larger the firm and the more it has invested in their workforce, the higher the cost of closing down. These variables are very sector-specific and capture sectoral idiosyncrasies in our dataset. An alternative specification including sectoral dummies is also estimated. Country fixed effects are included to control for national time invariant characteristics, which are expected to affect exit rates. The economic cycle is captured by changes in value added, which also allows to indirectly control for changes in financial conditions. ([12]) An alternative to the changes in added value -a crisis dummy for the period from 2008 to 2010- was used as a way to control for economic cyclical conditions. Although, the obtained coefficients remained significant, change in value added is selected over a crisis dummy for this analysis as added value contains information at a sectoral level. Note that since information on the late payment indicators is collected during the first three months of each year, a lag of this objective variable is indirectly entered in the analysis. Table V.1 describes the variables used in the econometric analysis and their source.

## IV.2. DESCRIPTION OF RESULTS

The estimated coefficients for different specifications are presented in Table IV.2 for B2B and G2B transactions. ([13]) Concerning B2B transactions, the empirical results show that delay is statistically significant and have a detrimental effect by increasing exit rates: a 1 point reduction in the payment delay ratio would reduce exit rates by about 2.8 or 3.4 percentage points, depending on whether sectoral dummies are used instead of firm size and investment per employee. ([14]) The estimated elasticities are robust to the introduction of control variables instead of sectoral dummies. The economic cycle (value added change) has a significant effect on exit rates and, as expected, negative trends result in higher exit rates. When included in the model, average firm size and

investment per employee have the expected negative effect which means that bigger firms are more likely to remain in the market and that high sunk costs for firms, measured as investment per employee, give fewer incentives to exit of firms.

Moving into G2B transactions, the same negative statistical significant effect of government late payments on exit rates is observed: a 1 point reduction in the delay ratio leads to a decrease in exit rates of about 1.7 to 2 percentage points. Once again, the estimated elasticities are robust to the introduction of control variables instead of sectoral dummies. The effect is lower than late payments in B2B transactions which could be due to the different representation of SMEs in both types of transactions. This information is not available but as mentioned above large firms represent the highest share in public tenders. The effect on exit rates of the business cycle and of the two variables capturing "propensity" to exit are also as expected.

The same specification linking exit rates with late payments has also been estimated for G2B transactions using as explanatory variable the "financial/GDP" variable (the concept of "financial cost" was discussed in section 4) instead of delay. The results, presented in the last two columns of Table IV.2, go in the same direction with a positive sign between the magnitude of the financial cost associated with late payments and exit rates. However, the coefficient is only statistically significant, and at a 10% confidence level, in the specification with sectoral dummies. There are three main reasons as to why this variable is not found to be significant. Firstly, the proxy of financial cost is made of three components and while public expenditure is contra cyclical, business delay is pro-cyclical. Secondly, the estimated financial costs may not capture all the cost associated with delay in payments. This may include for example costs in reputation, staff demotivation and loss of confidence from suppliers. Thirdly, assuming that financial costs are a good proxy for the costs associated with delay in payments, section IV has argued that they represent an underestimation if large claims have longer delays than the average-size claim. All these reasons could explain the differences in significativity between the delay ratio and the estimated financial costs.

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([12]) The Product Market Review (2013) found that cyclical conditions have a statistical influence on firm's perceived financial constraints.

([13]) Note that the coefficient for B2B and G2B transactions cannot be added together as each estimation is obtained separately.

([14]) Note that 1 point reduction in the ratio is an out of sample shock to the model due to the construction of this indicator.

Table IV.1:    **Dependent and Independent Variables**

| Variable | Description |
|---|---|
| Firm Exit Rates | Ratio between the number of deaths of enterprises and the total number of firms in a given country and sector across years |
| Government / Business delay over contractural terms ratio | Government/ Business delay expressed as the absolute duration of delay in days in relation to the agreed payment terms. This definition allows controlling for the different contractual terms observed across countries and time. |
| Financial Cost / GDP | Financial Cost is defined as volume of claims against the public administration times interest rate for loans to non-financial corporations times "delay" measured as the government average delay expressed as a fraction of a year |
| Investment per person employed | Ratio between investment in tangible goods and the total number of person employed in active firms |
| Average size of firms | Ratio between the total number of employees and the number of active firms |
| Value added | Gross value added (at basic prices) |

(1) Country coverage: Austria, Belgium, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Hungary, Italy, Netherlands, Poland, Portugal, Sweden, Slovakia and United Kingdom.

Variables from Eurostat are constructed using the classification Nace rev.1 and Nace rev.2 matched through the correspondence table. Data according to NACE revision 2 is converted into NACE revision 1.
*Source:* Eurostat & Intrum Justitia

Table IV.2: **The effect of late payments on exit rates: Business-to-Business (B2B) and Government-to-Business (G2B) transactions**

| VARIABLES | Exit Rate B2B | Exit Rate B2B | Exit Rate G2B | Exit Rate G2B | Exit Rate G2B | Exit Rate G2B |
|---|---|---|---|---|---|---|
| Constant | 0.0571*** | 0.0274*** | 0.0586*** | 0.0298*** | 0.102*** | 0.0900*** |
| | (0.00468) | (0.00465) | (0.00469) | (0.00478) | (0.0352) | (0.0293) |
| Change in Added Value | -0.0355*** | -0.0335*** | -0.0378*** | -0.0377*** | -0.0455*** | -0.0391** |
| | (0.0122) | (0.0122) | (0.0125) | (0.0126) | (0.0165) | (0.0163) |
| Firm Size | -0.000422*** | | -0.000417*** | | -0.000610*** | |
| | (0.000104) | | (0.000103) | | (0.0000925) | |
| Investment per Employee | -0.000161** | | -0.000163*** | | -0.000141 | |
| | (0.0000628) | | (0.000063) | | (0.0000967) | |
| **Payment Delay** | **0.0279*** | **0.0342*** | **0.0177** | **0.0203*** | | |
| | **(0.0102)** | **(0.0089)** | **(0.0073)** | **(0.00661)** | | |
| **Ln(Financial Cost / GDP)** | | | | | **0.00378** | **0.00578*** |
| | | | | | **(0.00402)** | **(0.00333)** |
| Country Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Sector Fixed Effects | | Yes | | Yes | | Yes |
| Observations | 542 | 647 | 542 | 647 | 441 | 534 |
| R-squared | 0.516 | 0.636 | 0.514 | 0.632 | 0.505 | 0.61 |

## IV.3. HOW DOES THIS TRANSLATE INTO COUNTRY SPECIFIC EFFECTS?

Using the estimated coefficients from model 2 for B2B and model 4 for G2B (the specifications using sectoral dummies) it is possible to estimate the gains in terms of the reduction of firm exit rates in the different countries under different assumptions or scenarios.

The first scenario (Table IV.3) looks at progress since 2010, where progress is captured by the observed change between 2010 and 2013 in the payment delay ratio per country. This scenario is simulated for Italy, Spain and Portugal. ([15]) For example, in the case of Italy delay in B2B transactions has increased by 1 day while at the same time a 1 day decreased in contractual terms is observed. ([16]) In G2B transactions the delay has decreased from 100 in 2010 to 90 in 2013 and contractual terms have decreased by 6 days.

Accordingly, the observed reduction in payment delay in G2B payments has translated into an estimated reduction of exit rates of around 0.08 percentage points. On the other hand, longer payment delay in B2B transactions increase firms'

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([15]) Greece is not included in analysis due to unavailability of data on demographic variables.

([16]) In this case duration remains constant, but the delay ratio increases.

Table IV.3: **Effect on exit rates of developments in late payments**

| Country | Type of transaction | Payment Information (2010) | | Payment Information (2013) | | Sample Exit Rate (%) (2010) | Actual Reduction Impact on exit rates (in pp) | Total Reduction Impact on exit rates (in pp) |
|---|---|---|---|---|---|---|---|---|
| | | Delay | Contract | Delay | Contract | | | |
| Italy | B2B | 30 | 66 | 31 | 65 | 7.73 | 0.076 | -1.55 |
| | G2B | 100 | 86 | 90 | 80 | | -0.077 | -2.36 |
| Spain | B2B | 28 | 70 | 25 | 60 | 8.89 | 0.057 | -1.37 |
| | G2B | 65 | 88 | 75 | 80 | | 0.404 | -1.5 |
| Portugal | B2B | 37 | 51 | 35 | 50 | 19.26 | -0.0872 | -2.48 |
| | G2B | 84 | 57 | 73 | 60 | | -0.522 | -2.99 |

(1) Late payments is measured by the delay ratio (delay/contract). In the first scenario, the effects reported refer to actual change in this ratio between 2010 and 2013 and in the second scenario the effects reported refer to zero delay scenario. "B2B" stands for Business-to-Business; "G2B" to Government-to-Business.
*Source:* Own Calculations

exit rate by 0.08 percentage points. The observed evolution in delay and contractual terms in Portugal translates into a decrease in the delay-to-contractual terms ratio, which in turn decreases exit rates by around 0.087 percentage points in B2B transactions and 0.52 percentage points in G2B transactions. For the case of Spain, and unlike Portugal, the delay-to contractual terms ratio increases leading to a 0.057 percentage points increase in exit rates due to B2B delays and a 0.4 percentage points increase due to G2B delays. Applying these changes to the exit rates of the selected sectors (2010) yields for the case of G2B a change from 7.73% to 7.65% in Italy; 8.89% to 9.29% in Spain; and 19.26% to 18.74% in Portugal.

The second scenario (Table IV.3) is hypothetical and predicts the impact of total reduction of late payments bringing to zero delays from the average delay on transactions observed in each country in 2010. ([17]) Under this scenario, exit rates in Italy would decrease to 6.18% in the case of B2B transactions and to 5.37% in the case of G2B. Portugal would decrease firm exit rates to around 16.78% for B2B and around 16.27% for G2B. Finally, Spain would also benefit from reducing delays as firm exit rates would be decreased to around 7.52% for B2B operations and 7.39% for G2B operations. In the three countries we observe large potential gains but it is in the case of Portugal where these potential benefits are the largest and this is due to the lower contractual terms that Portugal has when compared with Spain and Italy.

The numbers in terms of percentages look small but as an illustration of the magnitude of this reduction, in terms of numbers of firms, if exit rates were to be reduced by 1 percentage points in the sectors considered in this analysis, Italy would experience a reduction in the exiting of business by approximately 41,451 firms, whereas Portugal and Spain would experience a reduction of 9,373 and 31,747 firms respectively.

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([17]) Indeed the sample does not have any country with zero delay. Accuracy of these results is affected by the fact that these are "out-of-sample simulations.

# V. CONCLUSION

Reducing late payments of commercial debt can contribute to restoring access to finance, specially affecting small and medium enterprises (SMEs), as highlighted in the Communication on "Action for Stability, Growth and Jobs". ([18]) For this purpose, actions at a European and national level have been introduced to reduce the cost that firms experience associated with payment delays both in public and private transactions.

Drawing upon a dataset on late payments collected by Intrum Justitia, this paper adopts a broad horizontal approach covering a large sample of EU Member States. It assesses the cost that late payments –both G2B and B2B– have on firms by presenting estimates of the implicit financial cost it imposes as well as the effect on firms' death by pushing them out of business. These estimates allow evaluating and comparing the magnitude of the problem in the EU Member States covered by the analysis as well as the effect of the efforts undertaken to address it. The analysis cannot differentiate across industries. In order to properly assess the effect on different sectors, new datasets containing the payment durations and delays at a sectoral level in each country would be needed.

Our findings are in line with the economic rationale and suggests that late payments in commercial transactions by the public administration and private entities have detrimental effects on the business environment, in particular by exacerbating the burden of already financially constrained firms which can ultimately push them out of business.

The financial cost in terms of GDP imposed by government late payments is high and led across the EU by Greece, Portugal, Italy and Spain. While the observed reduction in the ratio between delay and contractual terms in Portugal and Italy over the last year might lead to a decrease in exit rates, the situation in Spain has not improved, suggesting that the effects of the recent initiatives to combat late payment are not yet observable in the data. The results suggest the gains to be reaped if late payments were to be eliminated.

Economy-wide effects of late payment reduction could be obtained by translating the results presented into policy shocks that could feed QUEST-model. Furthermore, the possible negative consequences that late payments have by discouraging firms when bidding for public contracts could be studied. The underling idea is that if public authorities were to pay in time, more firms would enter the tender due to a hypothetical reduction in the price of entering the bid with the subsequent savings for the public authorities.

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([18]) COM(2012) 299 final via http://ec.europa.eu/europe2020/pdf/nd/eccomm2012_en.pdf

# REFERENCES

Mare. D, O. da Empoli, N. Radic and F. Fiordelisi (2012). "Government late payments: the effect on the Italian economy". Financial Intermediation Network of European Studies

Miguel C. Manjon-Antolin (2010). "Firm size and short-term dynamics in aggregate entry and exit". International Journal of Industrial Organization.

Fotopoulos, G., N. Spence, (1998). "Entry and exit from manufacturing industries:symmetry, turbulence and simultaneity — some empirical evidence from Greekmanufacturing industries, 1982–1988". Applied Economics 30, 245–262.

Dunne, T., M.J. Roberts, (1991). "Variation in producer turnover across US manufacturing industries". In: Geroski, P.A., Schwalbach, J. (Eds.), Entry and Market Contestability. Blackwell, pp. 187–203.

Kleijweg, A.J.M., M.H.C. Lever (1996). "Entry and exit in Dutch manufacturing industries". Review of Industrial Organization 11, 375–382.

European Commission (2013). "Product Market

Review 2013. Financing the real economy",

European Economy, 8, 2013.

"Evaluation of SMEs' access to public procurement markets in the EU" (2010). DG Enterprise and Industry

European Payment Index. Intrum Justitia. (Data 2013).

Action for Stability, Growth and jobs. Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of the regions and the European Investment Bank. European Commission

Directive 2011/7/EU of the European Parliament and of the council of 16 February 2011 on combating late payment in commercial transactions. Official Journal of the European Union

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