

# The Impact of the Global Economic Crisis on the Corporate Sector in Europe and Central Asia: Evidence from Firm-Level Survey

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## Summary

The World Bank's Enterprise Financial Crisis Survey<sup>1</sup>, implemented during June and July 2009, addresses the impact of the global economic crisis on the corporate sector. It covered 1,686 enterprises from six countries in Eastern Europe and Central Asia (Bulgaria, Hungary, Latvia, Lithuania, Romania, and Turkey). This Note describes how the crisis affected the corporate sector; how firms responded; and their expectations about the near future. The main results may be summarized as follows:

- Despite the magnitude of the credit crunch, the majority of firms declared that contraction in demand was the most important effect of the crisis on their business. However, a non-negligible number of firms, especially in Bulgaria and Turkey, have reported significant sales growth.
- In June/July, the corporate sector's debt-to-sales ratio was moderate. The share of debt in foreign currency was about 26 percent on average, with almost one-fourth of firms reporting a foreign debt ratio higher than 60 percent. Debt maturity was less than one year for most firms.
- Firms increased the use of internal funds to finance working capital, delayed payments to tax authorities or suppliers, and attempted to restructure their debt. State aid was more often used than the insolvency (bankruptcy) regime, but less often than debt restructuring.
- Further sales decrease and layoffs were expected in the six months following the survey. Firms expected to fall in arrears, but believed that they would be able to repay their liabilities.
- Sales dropped more in young firms in all countries and in innovative firms in Latvia, Lithuania, and Turkey. Skill-intensive firms suffered a significant drop in employment, except in Hungary.

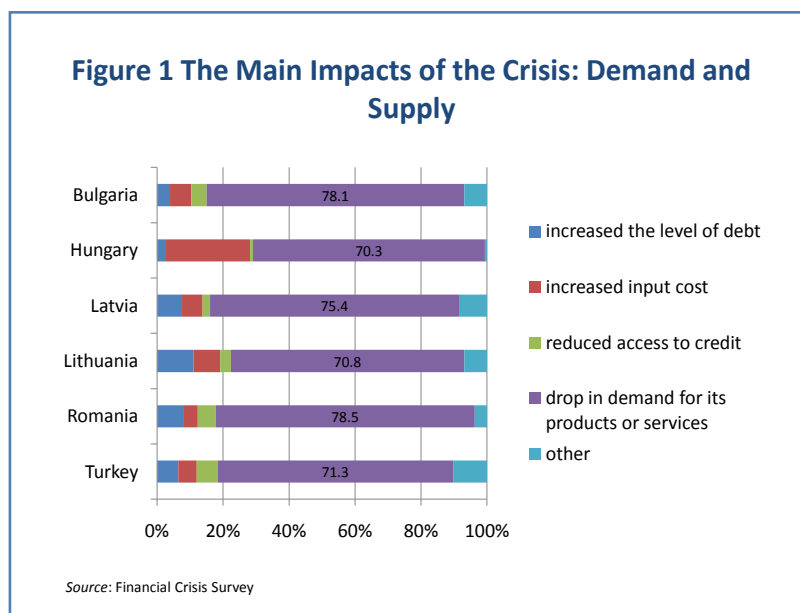
Data from the next two rounds of data collection will shed more light on how quickly countries in the region will recover. The next rounds of data collection will take place in January and June 2010. These rounds will be used to monitor the impact of the crisis and the pace of recovery over time.

## 1. An Overview

The global economic crisis changed dramatically the market conditions under which the corporate sector operates. The deleveraging of financial institutions increased capital costs and reduced credit availability, while adjustments in the exchange rate raised the price of imported inputs and turned exports more competitive. The contraction in global trade decreased foreign and, as a second round effect, domestic demand.

### The drop in demand was the most relevant impact of the crisis in all countries

The survey<sup>2</sup> showed that around 75 percent of firms considered the drop in demand as the most important effect of the crisis, compared with “increase in the level of debt,” “increase in input cost,” or “reduced access to credit.”<sup>3</sup> As shown in figure 1, in Hungary and Turkey, this value was slightly lower (70.3 percent and 71.3 percent, respectively).



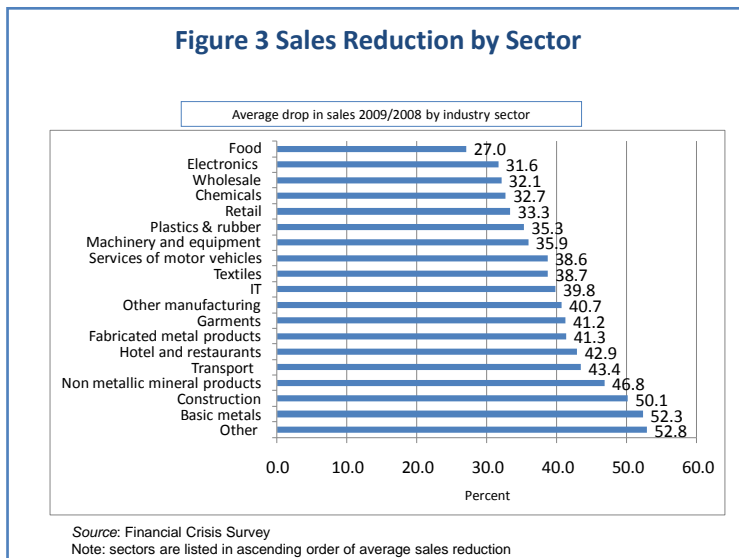
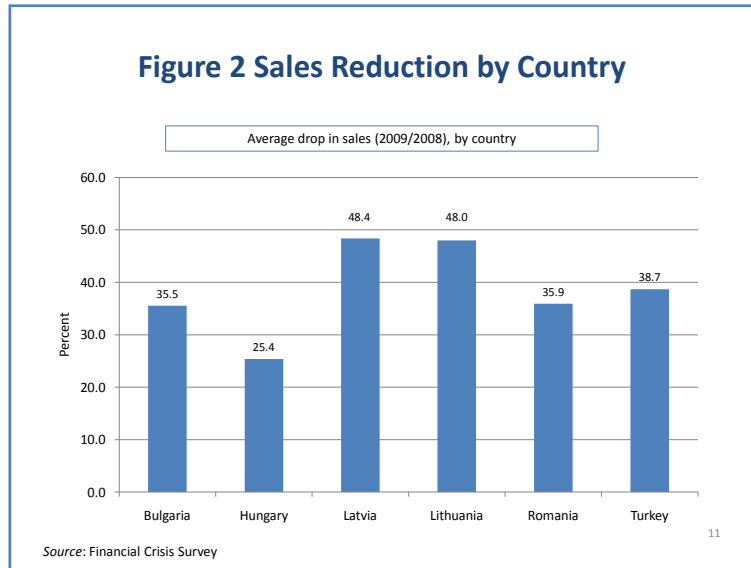
Capacity utilization ratios and employment levels have adjusted accordingly. The average capacity utilization ratio in June/July 2009 was 66.9 percent. Latvia (47.6 percent), Lithuania (49.9 percent), and Turkey (51.3 percent) showed the lowest levels among the six countries. The firms in all countries have, on average, 2.6 fewer permanent full-time employees when comparing June/July 2009 with December 2007. The major reductions happened in Turkey (8.9 fewer employees, on average) and in Lithuania (5.5 fewer employees, on average).<sup>4</sup>

### Supply-side factors were comparatively more relevant in Hungary, Lithuania, and Turkey

Approximately 19 percent of the enterprises declared the main impact to be related to factors associated with the supply side of the economy (cost of debt, availability of credit, and inputs costs). Supply-side channels were considered important for a larger number of companies in Hungary (29.1 percent), Lithuania (22.3 percent) and Turkey (18.4 percent). It was to some extent surprising to notice that access to credit was considered the most relevant impact of the crisis by only a small number of enterprises in all countries. Different from previous shocks (for example, the oil crisis in the 1970's) and despite the credit crunch in all those countries, supply-side effects seemed to be less relevant.

**The impact of the crisis was extensive, regardless of sector, firm size, or location**

The average drop in sales in 2009/2008 was significant in all countries, but was particularly steep in Latvia and Lithuania, where the average sales contraction was 48.4 percent and 48 percent, respectively (figure 2). The largest decline was shown in the basic metals industry (52.3 percent), a sector that exported 31.6 percent of total sales in the month previous to the survey (in 2009); and in construction (50.1 percent), where pre-existing housing market “bubbles” affected construction activity in most countries (figure 3).<sup>5</sup> On the other hand, the smallest sales contraction was observed in the food (27 percent) and electronics (31.6 percent) industries, both domestic-oriented activities.<sup>6</sup> Sales reductions spread across all firm sizes. Firms with less than 5 employees experienced an average drop in sales of 36.7 percent, while large firms showed an average sales contraction of 33.1 percent. The drop in demand was almost uniformly distributed geographically. In capital cities, the sales decline was, on average, 37.3 percent; in cities with a population of more than 250,000 and less than 1 million habitants, the average drop was 34.4 percent; while cities with less than 50,000 habitants showed an average drop in sales of 38.9 percent.

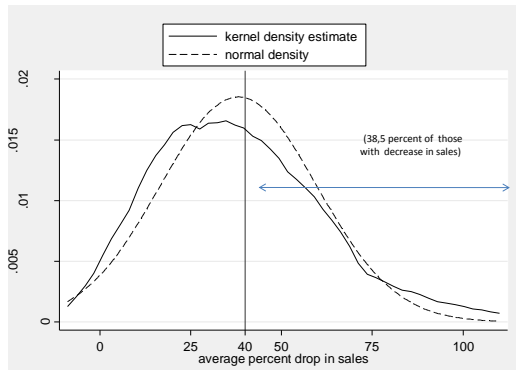


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**Among the firms experiencing a drop in sales, one third reported a decline larger than 40 percent**

Figure 4 shows that among the firms experiencing a sales decline, one-third reported a reduction larger than 40 percent (“most affected firms”). This proportion of firms varies between 33.8 percent and 56 percent in Bulgaria, Latvia, Lithuania, Romania, and Turkey. In Hungary, however, the proportion of companies with a sales decline larger than 40 percent was only 13.1 percent. The entire distribution of sales reduction (for all countries) was right-skewed, with a mean of about 38.1 percent. These “most

**Figure 4 Distribution of Drop in Sales (2009/2008)**



Source: Financial Crisis Survey

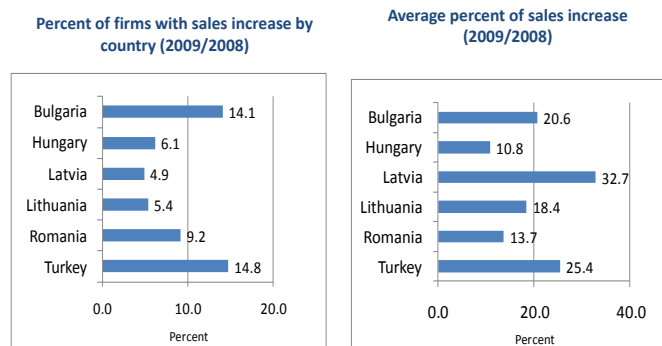
affected firms” were more frequent in Latvia and Lithuania; within medium-size (with 20 to 99 employees) and small firms (with 5 to 19 employees);<sup>7</sup> in the basic metals and construction industries (with 64.7 percent and 60.1 percent, respectively, of the total firms in each of these activities);<sup>8</sup> and in small (with less than 50,000 habitants) or medium-size cities (with 50,000 to 250,000 habitants).<sup>9</sup> Surprisingly, export-oriented enterprises were not predominant among these “most affected firms” (56.5 percent of them export less than, or equal to, 10 percent of

their sales), except in Romania.<sup>10</sup>

**Yet some enterprises have already experienced significant growth**

Despite the generalized drop in demand, a non-negligible proportion of firms in all six countries experienced significant growth in sales. Firms reporting sales expansion amounted to 10 percent of total firms. This corresponds to roughly 15 percent in Turkey and Bulgaria, around 5 percent in Hungary, Latvia and Lithuania, and 10 percent in Romania. Figure 5 also shows that, among firms reporting sales increase, Turkish and Bulgarian showed increases of more than 20 percent. In Latvia and Lithuania, the declared average growth was about 33 percent and 18.4 percent, respectively. Almost 66 percent of companies that experienced sales growth in Turkey belonged to the food, textiles, or chemical sectors and were mainly domestic oriented.<sup>11</sup> In Bulgaria, on the other hand, more than 50 percent of firms that reported a demand growth were in wholesale and retail activities. The same phenomenon happened in the other four countries, where most of the growing firms were clustered in the retail (10.9 percent) and wholesale (34.9 percent) sectors. This result may be a first indication of the direction of structural adjustment (towards domestic-oriented or nontradable sectors) triggered by the crisis. Follow-up surveys will help our understanding of whether those firms/sectors will lead the recovery.

**Figure 5 The Firms that Benefited**

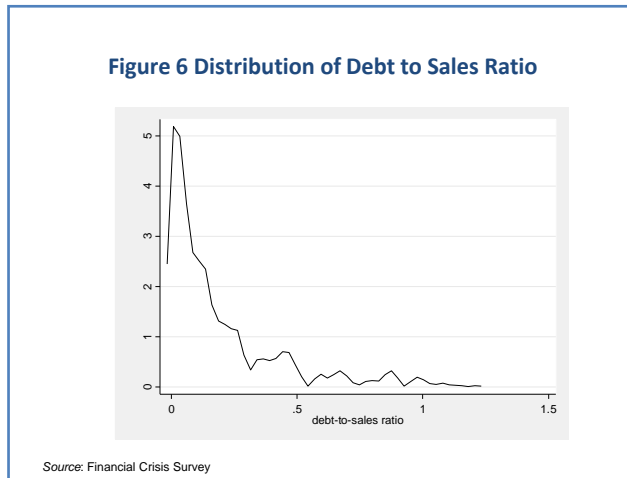


Source: Financial Crisis Survey

## 2. The Crisis and the Corporate Sector

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### The corporate sector's debt is moderate



The corporate sector's debt-to-sales ratio was moderate. With the entire distribution skewed to the right, as shown in figure 6, the indebtedness ratio showed a mean of about 19 percent, with 66 percent of companies presenting a ratio less than, or equal to, this level. This proportion of firms varies between 58 percent and 76 percent in Bulgaria, Latvia, Lithuania, Romania and Turkey. In Hungary, this proportion of companies is even larger, at 99.4 percent. Romania presented the largest average debt-to-sales ratio (23.2 percent), followed by

Turkey (21.7 percent) and Bulgaria (17.2 percent). In the manufacturing industry, fabricated metal products and textiles presented the largest ratios, 22.4 percent and 25.6 percent, respectively.<sup>12</sup>

### The drop in sales increases with debt levels

The debt-to-sales ratio seemed to be associated with the larger decline in sales in 2009/2008. We found a positive (and statistically significant) association between these two measures, which means that the sales decline was higher among firms that may face difficulty in paying their debt due to their higher debt-to-sales ratio. This association was mostly present in Lithuania and Turkey. In Lithuania, for instance, the average drop in demand (in 2009/2008) for firms with a debt-to-sales ratio less than 19 percent was 44.4 percent; while for firms with larger indebtedness, the sales declined 67 percent, on average. In Turkey, the drop in demand for these two ranges of debt-to-sales ratio was 36.7 percent and 48.9 percent, respectively.<sup>13</sup>

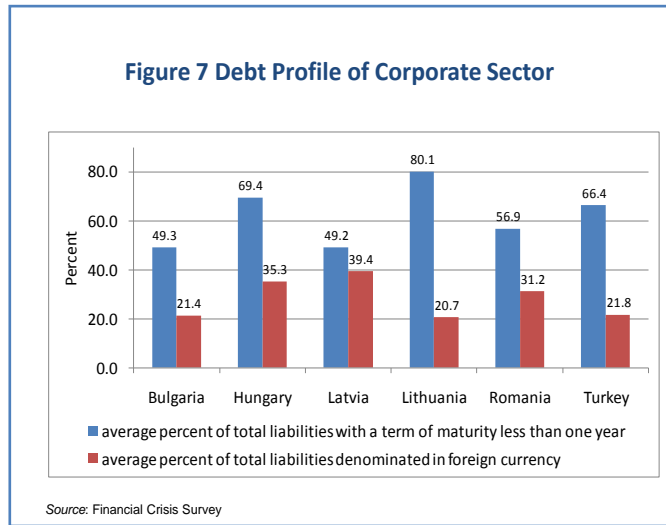
### The share of the corporate sector's debt in foreign currency is considerable

Approximately 41 percent of firms in the six countries hold foreign-denominated debt. On average, 26.4 percent of the corporate sector's debt was foreign-currency denominated, with some countries presenting a figure above this average, such as Hungary, Latvia and Romania (figure 7).<sup>14</sup> However, a great number of firms (23.3 percent) had a foreign currency debt ratio larger than 60 percent. In Latvia, the country where the corporate sector seemed most exposed, almost 56 percent of firms carried foreign-currency denominated debt, which corresponds to about 70 percent of their total debt, followed by Hungary (52.4 percent of firms with an average of 67.3 percent of foreign-currency denominated debt). Roughly 24.3 percent of enterprises with foreign debt in Latvia were export oriented, while in Hungary the proportion of firms with foreign debt and selling to foreign markets was 15.5 percent.<sup>15</sup> In

Hungary, the most exposed sector in the manufacturing industry was “other manufacturing”, with an average of 97.8 percent of foreign-denominated debt, while the firms with least exposure were clustered in the fabricated metal products and electronics industries. In Latvia, the “other manufacturing” sector was also the most exposed, with an average of 59.9 percent of debt denominated in foreign currency, while the least exposed sectors were textiles and fabricated metal products.

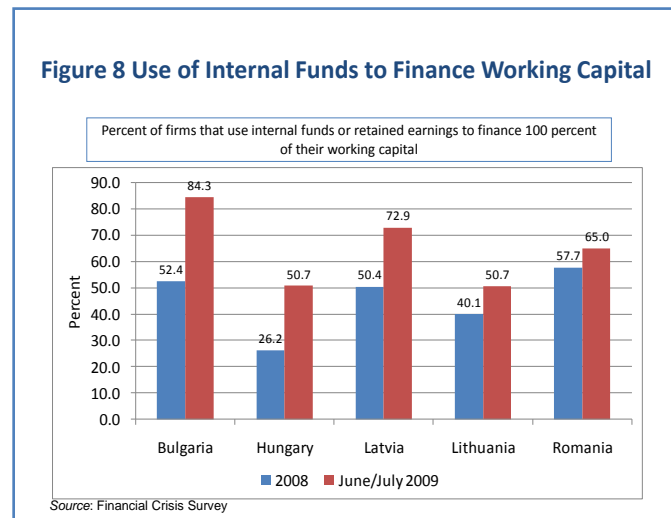
**Debt maturity is concentrated in the short term**

Debt maturity was quite concentrated in the short term. The data showed that in all countries the average proportion of the corporate sector’s debt with a term of maturity of less than one year was larger than 50 percent, particularly in Hungary (69.4 percent), Lithuania (80.1 percent), and Turkey (66.4 percent) as shown in figure 7.<sup>16</sup> Basic metals and chemicals were the activities with the largest proportion of debt maturing in less than 12 months, with averages of 82.7 percent and 72.7 percent, respectively.<sup>17</sup>



**Firms reacted to the crisis by increasing the use of internal funds to finance working capital<sup>18</sup>**

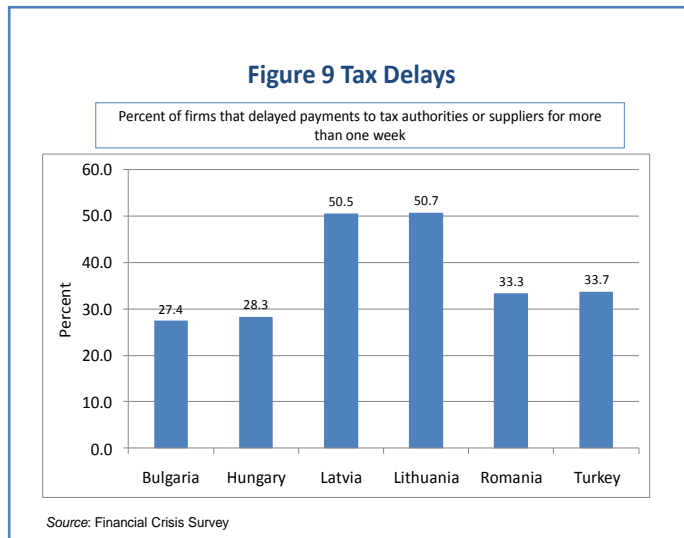
Firms reacted to the crisis by relying more on their internal resources to finance working capital. When comparing the end of fiscal year 2008 to June/July 2009, the proportion of firms that financed 100 percent of their working capital with their internal funds or retained earnings increased in all countries.



This increase was particularly relevant in Bulgaria (31.9 percentage points) and Hungary (24.5 percentage points). In Bulgaria, the food sector was the manufacturing activity that showed one of the largest average increases in the proportion of working capital financed from internal funds (from 85.9 percent in 2008 to 95.6 percent in 2009); in Hungary one of the largest average increases occurred in the non metallic and mineral products sector (from 64.1 percent to 93.3 percent in the same period). As firms allocate more of their internal funds to

finance working capital, fewer resources will be available for investments in new equipment, labor training, and R&D. This in turn tends to curb firms’ productivity.

## Enterprises are also delaying payments to tax authorities or suppliers



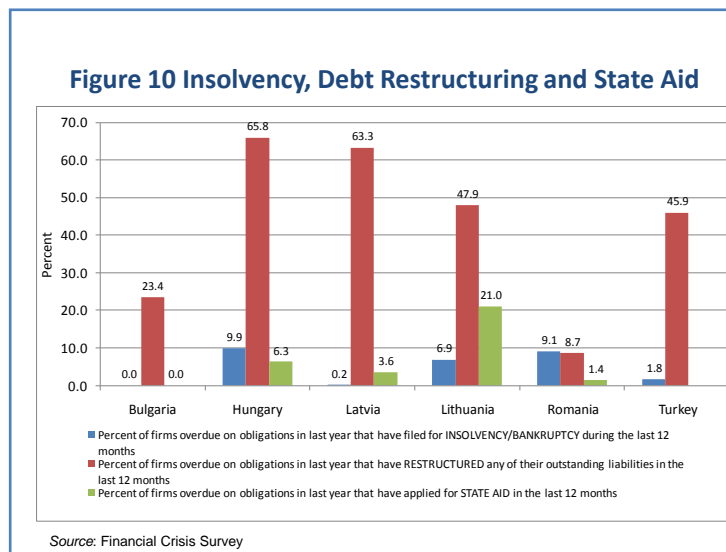
Another frequent response to the current liquidity constraint was delaying payments to tax authorities and suppliers. As shown in figure 9, payment adjournments for more than one week were especially relevant in Latvia and Lithuania, where the proportions of delayed firms were, respectively, 50.5 percent and 50.7 percent. In these two countries, the construction sector contained the firms with the largest propensity of delaying payments to government or suppliers, 52.7 percent in Lithuania and 65.1 percent in Latvia.

## Firms are actively seeking to restructure their debt

Approximately 14 percent of companies in all countries attempted to restructure their debt in the 12 months ending in June/July 2009. This process seemed to be more intense in Latvia and Lithuania, where almost 25 percent of firms have restructured their outstanding liabilities,<sup>19</sup> and in the chemicals and nonmetallic mineral products sectors, with 30.9 percent and 26.2 percent, respectively.<sup>20</sup> Figure 10 shows that this result was magnified when considering a subsample of firms with overdue payments to any financial institution, particularly in Hungary and Latvia, where 65.8 percent and 63.3 percent, respectively, of delayed firms have tried to restructure their debt.

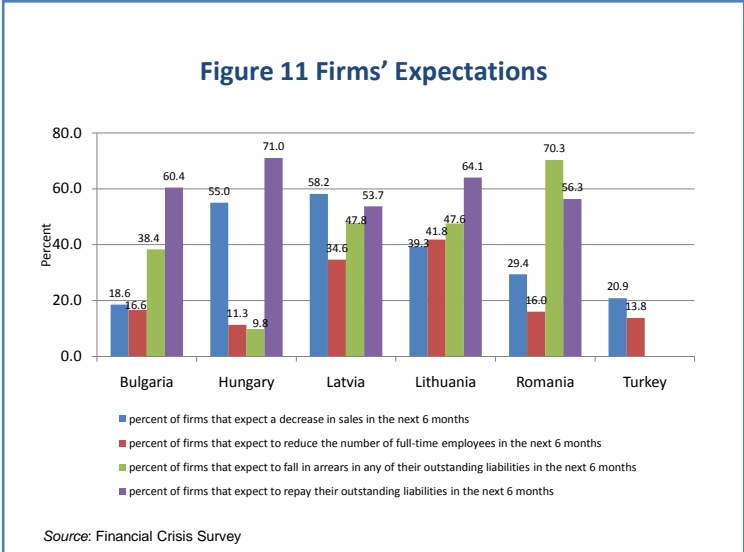
## Filing for insolvency or bankruptcy was less frequent than the use of state aid<sup>21</sup>

Almost 2 percent of all companies applied for insolvency or bankruptcy in the 12 months that preceded the survey. This proportion increases when considering only the firms with overdue payments. In that case, almost 6 percent of firms have filed for insolvency or bankruptcy. This result differed across countries: although in Bulgaria and Latvia, none and 0.2 percent, respectively, of firms with overdue obligations have filed for insolvency or bankruptcy, in Hungary the use of these last resource measures was more significant, at



9.9 percent (figure 10). In all EU countries, the state aid instrument was more frequently used than insolvency or bankruptcy measures, though less employed than debt restructuring. On average, 8.3 percent of firms applied for state aid in the previous 12 months (as of June/July 2009).<sup>22</sup> When focusing on a subsample of firms with overdue payments, the proportion of firms that applied for state aid increases in all countries, except in Bulgaria and Latvia.

**Firms’ expectations about the near future provide mixed signals**



The sales decline was expected to continue, at least in the short term. In all countries—especially in Hungary, Latvia, and Lithuania—a great proportion of firms expected a further decrease in sales in the following year (figure 11). A pessimistic perception was also presented when firms were asked if they planned to reduce the number of permanent full-time employees. A large number of enterprises projected further layoffs, particularly in Latvia and Lithuania. This growing unemployment

perspective was likely to be higher for larger firms. The proportion of firms that were inclined to reduce their permanent workforce because of the financial crisis increased with firms’ sizes in all countries, except in Hungary and Turkey. In Latvia and Lithuania, for instance, while 14.4 percent and 17.3 percent, respectively, of firms with less than 5 employees expected to reduce their workforce size, 44.1 percent and 52.7 percent, respectively, of large firms (with more than 100 employees) expected to lay off some of their full-time workers.

Although the current debt profile of the corporate sector revealed some fragilities, particularly regarding debt maturity and (in some countries) debt exposure to foreign currency, firms’ expectations about future financial conditions did not reveal an overall pessimistic scenario.<sup>23</sup> When firms were asked whether they anticipated falling into arrears in any of their outstanding liabilities in the six-month period following the survey, a large number responded negatively, except in Hungary. As shown in figure 11, this was particularly the case in Romania with 70.3 percent of firms expecting to be late in meeting an obligation. In Hungary, however, this proportion fell to 9.8 percent. Firms seemed to show optimism in that they expected to repay their liabilities, particularly in Hungary and Lithuania. There, the proportion of firms that thought they would be able to repay their outstanding liabilities coming due in the course of the six months following the survey was 71 percent and 64 percent, respectively.

### 3. Further Analysis and Next Steps

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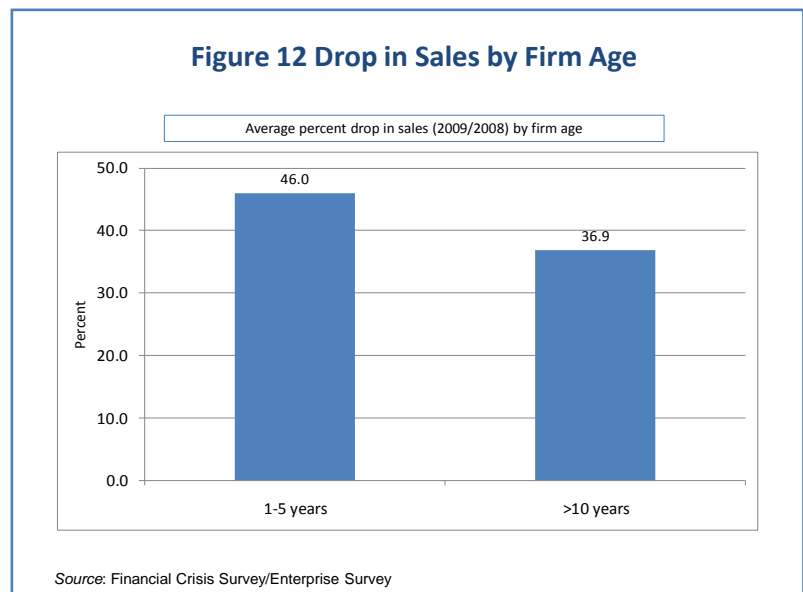
Apart from the direct effect on the corporate sector; its response and expectations about the near future, one important question about the upcoming recovery refers to the potential “sources” of future growth. What does the first EFCAS tell us about this question? Available data suggest at least three possible challenges for the achievement of sustained growth rates: the structural adjustment triggered by the crisis; the impact on the performance of younger firms; and the effect on innovation.

#### **The employment reduction on firms with a more qualified workforce was severe**

Full-time employment of skill-intensive enterprises (firms employing more than 20 percent of workers with university degrees) fell in all countries, except in Hungary. The average firm showed a reduction of 2 permanent workers when comparing June/July 2009 with December 2007. Turkey presented the largest average drop in permanent workers, 8.9 workers in the same period. Longer unemployment duration among skilled workers (leading to a deterioration of the human capital base of the economy), and lower labor productivity in eventual new jobs (because of inadequate job matching) will hinder the expansion of potential output.

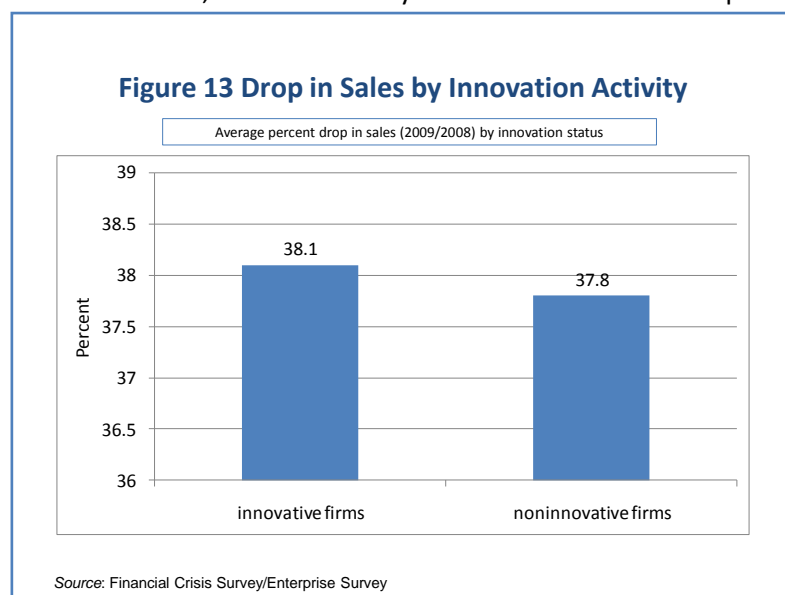
#### **Younger firms experienced a larger contraction in sales than older firms**

Sales of young firms (less than 5 years old) declined, on average, 46 percent in the previous 12 months, compared with 36.9 percent in the case of older firms (more than 10 years old), as shown in figure 12. Larger average drops in sales for younger firms were observed in all six countries. Bulgaria is the country with the largest difference between younger and older firms (46 percent compared to 37 percent, respectively), followed by Latvia.<sup>24</sup> Controlling for size, younger firms are expected to grow faster than older firms because of diminishing returns to learning, but it is not obvious why they should be more volatile during the business cycle or suffer a bigger decline during the downturn. The exit of firms economically viable in the long run as a result of, at least in part, temporary demand shocks distorts market selection and undermines productivity growth. Potential output growth will be affected, therefore, by the survival rates of young companies during the crisis.



## Innovative firms were more likely to report larger declines in sales

Innovative firms, as measured by the introduction of new products or services in the 2005–07 period



(data obtained from the 2008 Enterprise Survey), faced a drop in sales that was 0.29 percentage points, on average, larger than for noninnovative companies (figure 13). However, when differences in sector, firm size, export orientation, and innovation propensities within countries were taken into account, that positive association between innovation and decline in sales was magnified (with innovative firms presenting a drop in sales 7.1 percentage points higher than noninnovative firms, a result

statistically significant at 5 percent level) on average.<sup>25</sup> At country level, this result holds for Latvia, Lithuania, and Turkey.

### Next steps

Data from the next two rounds of data collection will shed more light on how quickly countries in the region will recover. The next rounds of data collection will take place in January and June 2010. These rounds will be used to monitor the impact of the crisis and the pace of recovery over time.

<sup>1</sup> Paulo Correa, Senior Economist (Sector Unit for Private and Financial Sector Development, Europe and Central Asia Region [ECSPF]) and Mariana Iooty, Consultant (ECSPF). The authors would like to thank Fernando Montes-Negret (Sector Director, ECSPF), Lalit Raina (Sector Manager), and Sophie Sirtaine (Sector Manager, ECSPF) for their guidance. Carlos Pinerua, Donato de Rosa, Gerardo Corrochano, Giuseppe Iarossi, Jorge Rodriguez, Juan Zaldueño, Penelope Williams, Rita Ramalho, Sebastian Trenner, Ulrich Zachau, and Vesselin Kuntchev provided valuable comments to an earlier draft. The findings, interpretations, and conclusions expressed in this note are entirely those of the authors. They do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank, or those of the governments they represent.

<sup>2</sup> This survey covers a subsample of firms drawn from the set of firms interviewed in the Enterprise Survey, implemented in 2008, in which the original sample is representative of the private nonagricultural formal economy of each country. The Note also uses data from this Enterprise Survey that serve as a baseline comparison because its questions are related to 2007, the precrisis scenario. The results analyzed here were estimated through the application of sampling weights—which denote the inverse of the probability that the observation is included because of the sampling design—to the original data adjusted to the non-response firms. These results are representative for the nonagricultural private economy within each country. An outlier treatment was applied, for each country, for the computed variable Debt to Sales ratio, based on variables Sales (for 2008) and Debt (for 2009), from the Financial Crisis Survey. The criterion was to consider as an outlier the observation lying outside the

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interval defined as the mean and  $\pm$ three standard deviations of the refereed variable, expressed in logarithm form. Besides this criterion, we also looked for severe outliers, defined as those observations that were smaller than  $Q(25)-3IQR$  or larger than  $Q(75)+3IQR$ , where  $Q(25)$  corresponds to the 25th percentile,  $Q(75)$  is the 75th percentile, and  $IQR$  is the interquartile range, defined as 75th percentile – 25th percentile.

<sup>3</sup> Throughout the Note, when presenting average values for all countries, we implicitly assume higher weights for firms in Bulgaria, Romania, and Turkey, compared with those for firms in Hungary, Latvia, and Lithuania. We make explicit the cases where the country results diverge significantly from those of the aggregated average.

<sup>4</sup> Romania was the only country where the average firm presented an increase in the number of permanent full-time employees (two workers).

<sup>5</sup> Throughout the Note figures for industry represent the non-weighted average for the whole sample.

<sup>6</sup> In Bulgaria, the smallest drop in sales occurred in wholesale (28.9 percent) and services of motor vehicles (16.6 percent); in Hungary, in information technology (IT) services (12.9 percent) and food (14.2 percent); in Latvia, in basic metals (10 percent) and chemicals (12 percent); in Lithuania, in plastic and rubber (25 percent) and food (20.5 percent); in Romania, in chemicals (28 percent) and food (28.7 percent); and in Turkey, where the survey considered only the manufacturing industry, in plastic and rubber (25 percent) and textiles (28 percent).

<sup>7</sup> In Hungary and Bulgaria, the firms with a drop in sales larger than 40 percent were more numerous among small and micro firms.

<sup>8</sup> In Bulgaria, the “most affected firms” (those with drop in sales larger than 40 percent in the period June-July 2009/ June-July 2008) were more numerous in textiles and fabricated metal products sectors; in Hungary, in nonmetallic mineral products and transport; in Latvia, in textiles and garments; in Lithuania, in construction and transport; in Romania, in textiles and construction; and in Turkey, where the survey considered only the manufacturing industry, in nonmetallic mineral products and “other manufacturing”.

<sup>9</sup> Turkey is the exception among the countries, because these “most affected firms” were more numerous in cities, other than capitals, with more than 1 million habitants.

<sup>10</sup> In Romania, 99 percent of the “most affected firms” export more than 10 percent of their sales.

<sup>11</sup> In Turkey, the shares of sales directed to the domestic market in the chemicals, food and textiles sectors were 81.6 percent, 74.5 percent, 47.6 percent, respectively.

<sup>12</sup> In Bulgaria, the sector with the largest average debt-to-sales ratio was fabricated metal products (25.2 percent); in Hungary, fabricated metal products (12 percent) as well; in Latvia, “other manufacturing” (13.6 percent); in Lithuania, fabricated metal products (15.7 percent); in Romania, the sector within the manufacturing industry with the largest average debt-to-sales ratio was food (46.2 percent); and in Turkey, where the survey considered only the manufacturing industry, the sector with the largest average debt to sales ratio was “other manufacturing” with 28.1 percent.

<sup>13</sup> The difference among these averages showed to be statistically significant at the 5 percent level in Lithuania and at the 10 percent level in Turkey.

<sup>14</sup> In figure 7, the computation of the average percent of total liabilities in foreign currency considers all firms, including those *without* foreign denominated debt.

<sup>15</sup> *Export orientation* being defined as having over 10 percent of sales as direct exports.

<sup>16</sup> As seen in figure 7, in Bulgaria and Latvia, the average proportion of the corporate sector’s debt with a term of maturity less than one year is 49.3 percent and 49.2 percent, respectively.

<sup>17</sup> In Bulgaria, the activities with the largest proportion of debt maturing in less than 12 months were garments (97.1 percent) and food (92.3 percent); in Hungary, retail (97.1 percent) and construction (85.8 percent); in Latvia, hotel and restaurants (68.8 percent) and food (58.6 percent); in Lithuania, fabricated metal products (97.3 percent) and plastic and rubber (100 percent); in Romania, the activities were retail and garment (both with 62.1 percent); and in Turkey, where the survey considered only the manufacturing industry, the activities were basic metals (97.1 percent) and textiles (73.4 percent).

<sup>18</sup> Turkey is not included in this comparison as this question was not asked in the survey for this country.

<sup>19</sup> In Bulgaria and Romania, the proportion of companies attempting to restructure their debt is lower: 12.1 percent in Bulgaria and 4.9 percent in Romania.

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<sup>20</sup> In Bulgaria, the attempt to restructure debt was most intense in electronics (69.9 percent of the firms); in Hungary, in nonmetallic mineral products (54.6 percent); in Latvia, in the food sector (58.7 percent); in Lithuania in electronics (71.3 percent); in Romania in the textiles sector (21.2 percent); and in Turkey, where the survey considered only the manufacturing industry, in the “other manufacturing” sector (19.6 percent).

<sup>21</sup> The survey did not make any reference to a particular legal definition of state aid. State aid was broadly defined as any form of assistance, subsidy, or program offered by the State.

<sup>22</sup> In Lithuania, this proportion is larger: at 11.7 percent.

<sup>23</sup> Turkey is not considered in this analysis on expectations of falling in arrears and on expectations of repaying the outstanding liabilities because the question related to falling in arrears was not included in the Turkey questionnaire.

<sup>24</sup> The difference between the averages of drop in demand was statistically significant (at the 1 percent level) when considering the companies of all countries together, as well as for companies in Bulgaria and Hungary. In this case, while the referred average difference was statistically significant at the 5 percent level in Hungary, the statistical significance level in Bulgaria was 1 percent.

<sup>25</sup> This analysis was developed through an econometric model that explains the average percentage drop in sales (in 2009/2008) based on the innovation status of the firm (introduction/not of a new product in the 2005–07 period), sector, firm size (measured through number of full-time employees in 2009), country, export orientation (measured as the share of the firm’s sales directed to exports), and an interaction between the firm’s innovative status and country. The overall effect was that innovative firms have a drop in demand 7.1 percentage points higher than noninnovative firms. The interaction terms were tested and proved to be statistically significant at the 1 percent level. Likewise, the entire model was significant at the 1 percent level. The R-squared of the model (which measures the proportion of the sample variation in the dependent variable that is explained by the regression; it is a measure of the fitness of the estimated equation to data) was 0.20. The results are available upon request.