

# Responses of Austrian Firms to a Decline in Demand – Results of a Company Survey

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*Based on a survey of around 560 Austrian firms conducted within Wage Dynamics Network (WDN) of the ESCB this study investigates how these firms respond to a decline in demand. About 80% of the firms surveyed report that they consider cutting costs a relevant or highly relevant measure in response to a demand shock. The interpretation of the responses suggests that such cost cuts mitigate, at least in part, the drop in output and thus tend to dampen the shock. Furthermore, 55% of firms stated that they would primarily cut nonlabor costs, while 45% would rather cut labor costs; also, firms would rather dismiss employees than cut their base wages. This attitude of Austrian firms can be mainly traced to their fear of declines in labor productivity.*

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This study investigates how Austrian firms respond to a demand shock and analyzes the effects of a decline in demand on prices and output. In addition to price and volume effects, cost cuts are found to play an important role. Moreover, the available data may also be used to examine the strategies Austrian firms use to cut costs. Thereby, special attention is paid to cost cuts that have consequences for the labor market.

The data used in this study stem from the Wage Dynamics Network (WDN), a research network set up by the ESCB. Within the WDN, researchers from the ECB and from 24 national central banks (NCBs) in the EU study the characteristics and sources of wage and labor cost dynamics in the euro area and other EU countries. The WDN follows various lines of research, one of which is based on an ad hoc survey on wage- and price-setting behavior at the firm level.

This survey provides a unique source of information that is to deepen our understanding of wage-setting practices, reasons for wage rigidities as well as strategies to reduce labor costs in Europe. One advantage of conducting an ad hoc survey at the firm level is

flexibility. By asking firms directly about what determines their wage-setting decisions and how they would respond to hypothetical situations it is possible to collect data that are otherwise difficult to obtain. Such firm-level information makes it possible to examine the effects of both firms' characteristics and their economic and institutional environment on wage setting. Furthermore, firm surveys typically have the advantage of providing more accurate information on wage developments than household surveys. Nevertheless, several shortcomings inherent in ad hoc surveys, such as low rates of response and potential misunderstandings in interpreting the questions, should be borne in mind. Moreover, the replies may be influenced by the specific macroeconomic environment prevailing at the time the survey is conducted.

The EU-wide company survey was carried out by 17 NCBs in autumn 2007 and in the first half of 2008 on the basis of a harmonized questionnaire. The Austrian survey, which was organized and conducted by the Austrian Institute of Economic Research (WIFO), started in November 2007 and took until February 2008, including two

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rounds of reminder letters. A total of 3,780 firms were contacted by mail, and 557 returned the filled-in questionnaire. This corresponds to a response rate of approximately 15%. The survey covered firms in the following sectors: manufacturing, energy, construction, trade and transportation as well as other services (including financial intermediation). The data are weighted retrospectively so that the sample is representative of the overall number of workers in the sectors covered.

This paper concentrates on Austrian firms but also draws comparisons with the euro area (Belgium, France, Greece, Ireland, Italy, the Netherlands, Austria, Portugal, Slovenia and Spain)<sup>2</sup> and with the full sample (euro area countries plus Estonia, Lithuania, Poland, the Czech Republic and Hungary).

In the current situation, with the global economy in the deepest recession since World War II, companies' response to a demand shock seems to be of particular interest since the recession has the same effect on many firms as a negative demand shock. However, this survey was conducted in relatively tranquil economic times – with forecasts predicting growth rates close to potential growth and inflation rates around 2% – and even though problems were already looming on the U.S. mortgage market, their extent was clearly underestimated. Therefore, direct conclusions as to firms' behavior in times of crisis can be drawn only to a very limited extent.

## 1 Response of Output and Prices

The firms surveyed were asked to assess the relevance of the presented measures if their businesses were facing an un-

expected slowdown in demand. The respondents could choose from the following five response options: reduce output, leave prices unchanged, reduce prices, reduce profit margins or cut costs. Firms were requested to indicate whether they considered each individual measure “highly relevant,” “relevant,” “of little relevance” or “irrelevant.” To facilitate the interpretation of answers, the categories “highly relevant” and “relevant” were regarded as approval and the categories “of little relevance” and “irrelevant” as disapproval.

Table 1 provides a first overview of the answers given by Austrian firms. The results suggest that, with an approval rate of about 80%, cost reduc-

Table 1

### Relevance of Different Strategies in Response to a Demand Shock

Possible strategy	Approval rate in %
Reduce costs	79.65
Reduce profit margins	51.09
Leave prices unchanged	43.94
Reduce output	43.13
Reduce prices	23.85

Source: WDN survey of firms.

tions are a common measure to respond to a decrease in demand. At around 50%, measures such as reducing profit margins, leaving prices unchanged and reducing output gained somewhat less approval. The lowest degree of approval was given to reducing prices, which just some 24% of Austrian firms considered relevant.

Table 2 shows firms' responses in detail, presenting the overall set of measures chosen with regard to the fact that multiple answers were permitted. With an approval rate of around 10% each, the measures most widely chosen

<sup>2</sup> Data are not available for all countries of the euro area. Finland, Malta, Slovakia and Cyprus did not take part in the survey. Data on Germany and Luxembourg are not reported, either.

Table 2

### Relevance of Different Sets of Measures

Possible strategy	Approval rate in %
Reduce output and costs and leave prices unchanged	11.28
Reduce profit margins, costs and prices	10.64
Reduce output, costs and profit margins	10.03
Reduce costs	9.70
Reduce output, profit margins, costs and prices	8.67
Take no specific measures	7.41
Leave prices unchanged and reduce costs	6.94
Reduce output, costs and profit margins and leave prices unchanged	6.86
Reduce output, profit margins and costs	5.50

Source: WDN survey of firms.

are cutting output and costs while leaving prices unchanged (1), cutting costs, prices and profit margins (2), and reducing output, costs and profit margins (3).

As mentioned in the introduction, one difficulty of surveys lies in the scope for interpretation on the part of respondents. The results of this survey leave room for interpretation mainly with respect to the concept of “cutting costs.” Since roughly 93% of the firms that decided they would reduce output also opted for cutting costs, the question arises whether, in this context, a reduction of costs was regarded as a reduction of total costs, which usually goes hand in hand with output cuts. Hence, these two measures would have been interpreted synonymously rather than as separate pieces of information as intended by the questionnaire (i.e. on the one hand, information on whether output was reduced and, on the other hand, information on whether marginal costs were cut).

If the firms actually interpreted the response option “reduce costs” as reduction of total costs, then the comparatively most common set of measures (table 2, reduce output and costs and leave prices unchanged) at an approval rate of about 11% can be presented as in chart 1. Chart 1 assumes

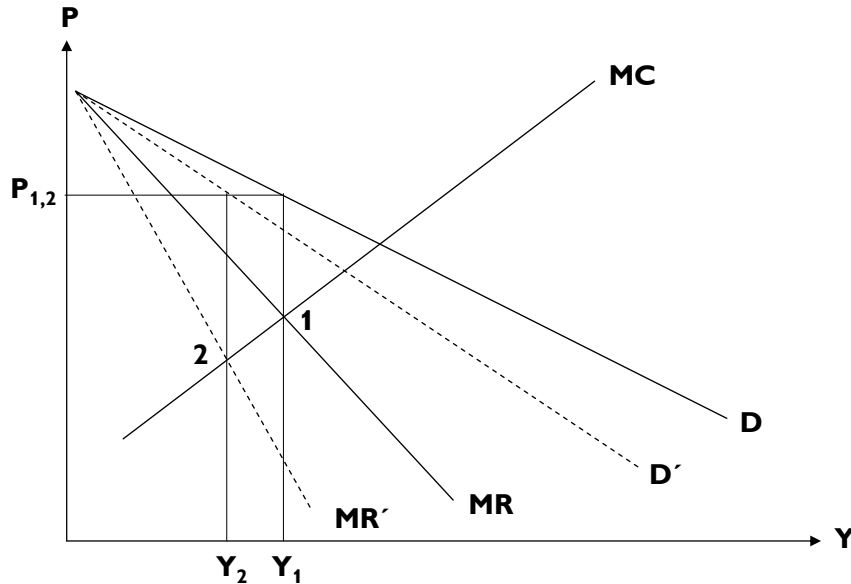
monopolistic competition as approximately 58% of surveyed firms replied to the question of how they set their prices that they calculated their prices on the basis of costs, adding self-determined profit margins. Only about 27% of firms, by contrast, indicated that their prices followed those of their major competitor.

Chart 1 shows that a negative demand shock causes the demand curve to shift from  $D$  to  $D'$  and marginal revenues, accordingly, to drop from  $MR$  to  $MR'$ . Consequently, the firm presented would, *ceteris paribus*, move from starting point 1 ( $MC = MR$ ) to point 2 ( $MC = MR'$ ) and, accordingly, reduce output from  $Y_1$  to  $Y_2$ . Given the assumed shape of the marginal cost and marginal revenues curve, the decline in demand exclusively affects output, while having no effect on the price, as the answers given by about 11% of respondents suggest. In this example, the drop in output to  $Y_2$  causes a decline in marginal costs and, consequently, in average costs and total costs. Based on these assumptions, the example presented in chart 1 illustrates a set of measures survey respondents chose relatively often: output goes down in line with costs, while prices remain constant.

However, a large number of firms (about 40% of those that stated they

Chart 1

## Effect of a Demand Shock on Output and Prices



would reduce costs) also stated in the survey that they would reduce costs without simultaneously cutting back output. This applies, for example, to the set of measures ranking second in table 2, i.e. a combination of cutting costs, profit margins and prices. Chart 2 shows a possible interpretation of this case and indicates that here, in addition to the processes presented in chart 1, the marginal cost curve shifts to counter the decline in demand. This means that additionally, firms respond to a demand shock with a shift of the marginal cost curve (from  $MC$  to  $MC'$ ), thus managing to prevent a drop in output and to continue to produce  $Y_1$ . In the example presented here, the price would drop from  $P_1$  to  $P_3$ .

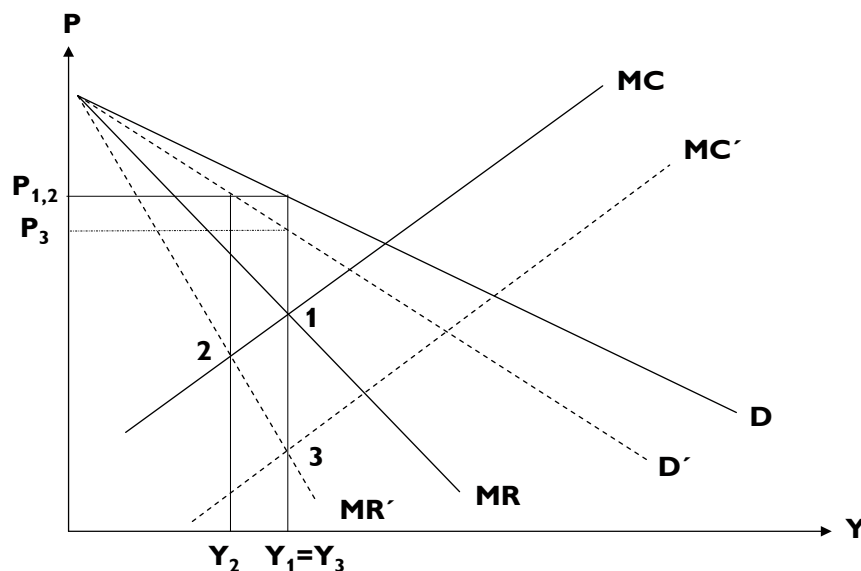
This result seems to contradict the hypothesis prevailing in the economic literature that companies are at their cost minimum at all times. Another interpretation of the picture this survey draws of firms may be that in times of crisis companies have cost reduction

potentials which they do not, or cannot, normally exploit. For example, companies may use difficult economic conditions to negotiate new terms with suppliers or discuss cuts in labor costs with the staff council – options that may be available only in times of crisis or temporarily. This approach would have a corresponding shock-reducing effect on the output level.

On the assumption that not all companies interpreted a reduction of costs as a reduction of total costs (and thus as a synonym for reducing output; see chart 1) but that some companies would additionally opt for reduce their marginal costs (as illustrated in chart 2), this measure would also dampen the drop in output. In this case, output would decline, but not by as much as in chart 1, where a reduction of marginal costs is not factored in.

All in all, the results of this survey suggest that cost cuts represent a widely used measure in response to declines in demand. Insofar as cost cuts, at least in

### Effect of a Demand Shock on Output and Prices with Simultaneous Reduction of Marginal Costs



part, reflect a shift of the marginal cost curve, this response contributes to reducing output loss.

## 2 How Firms Cut Costs

Those roughly 80% of firms that regard cost cuts as “highly relevant” and “relevant” in response to a demand shock were also asked in what way they would reduce costs. In the following, the answers to this question are analyzed.

### 2.1 Nonlabor Costs Dominate the Concept of Reducing Costs

Firms could choose from six response options, five of which focused on labor costs and one covered the collective term of nonlabor costs. Cost-cutting strategies referring to labor costs included reducing flexible wage components, cutting base wages, reducing working hours, discontinuing temporary employment contracts as well as dismissing parts of the core workforce. Respondents were asked to specify

only their most important cost-cutting strategy. Table 3 gives an overview of the answers provided by Austrian firms and shows that, with an approval rate of 55%, cutting nonlabor costs is somewhat more common than cutting labor costs (45%).

In detail, about 15% of Austrian firms indicated that they would cut costs by reducing working hours, while around 13% of firms would cut flexible wage components. Close to 11% would dismiss parts of the core workforce in response to a demand shock, whereas roughly 6% would discontinue temporary employment contracts.

The results presented in table 3 are in line with a phenomenon that is widely discussed in the economic literature, namely that in response to a decline in demand firms would rather dismiss employees than cut their base wages. None of the 557 firms in the sample stated that they would cut base wages. This corresponds to the findings

Table 3

### Relevance of Cost-Cutting Strategies

Possible strategy	Approval rate in %
Cut nonlabor costs	55.31
Cut working hours	14.90
Cut flexible wage components	12.55
Dismiss parts of the core workforce	10.91
Discontinue temporary employment contracts	6.33
Cut base wages	0.00

Source: WDN survey of firms.

of Agell and Lundborg (2003), who in 1998, following the most severe recession since the 1930s, asked Swedish firms whether they had reduced nominal wages in previous years. Out of 153 responding firms, only two stated that they had cut wages. Agell and Bennmarker (2007) also interviewed Swedish firms after the 1990s recession and arrived at the conclusion that only about 1% of employees covered by their sample had had to accept wage cuts. Accordingly, not even several years of high unemployment in Sweden (roughly 10% at the beginning of 1999) were able to make nominal wages more flexible. Such observations, as also described in Akerlof et al. (1996), bring up the question for the causes of downward nominal wage rigidity.

Bewley (1995, 1998, 1999) addresses this question by interviewing 372 persons professionally involved in hirings and dismissals and finds that by cutting wages, employers fear to hurt their employees' morale. Bewley's findings reveal that employers think an apparent fall in the standard of living and the insult implied by lower pay would result in a loss in loyalty toward the company. On the basis of these results, Howitt (2002) concludes that companies would consider cutting base wages only in cases of extreme financial difficulty.

Furthermore, Howitt argues that layoffs only hurt the morale of those leaving the company, while wage cuts have a lasting effect on the effort and productivity of remaining staff and, thus, on the firm.

In their study, Blinder and Choi (1990) come to a very similar result, also on the basis of interviews. They find that the noneconomic concept of fairness is better suited to explain wage rigidities than economic concepts, like e.g. implicit contracts. The interviewed firms stated that a wage policy that is perceived as unfair would raise staff turnover rates, dampen effort and lower the quality of future job applicants. However, Blinder and Choi emphasize that not every wage cut is necessarily regarded as unfair. There may be situations, e.g. when a firm faces bankruptcy, when wage cuts can be negotiated without further negative consequences.

Campbell and Kamlani (1997) asked 184 human resources managers by how much staff effort would be reduced if wages were cut by 10%. The average of answers was between 15% and 23% (depending on staff qualification) and here, too, respondents confirmed that in case of wage cuts, staff effort would go down more if the company was profitable than if it was making losses.

Table 4

### Approval to Theories on Nominal Wage Rigidity

Firms avoid cutting base wages because ...	Mean value	Approval rate in %	Alternative ranking
1 ... base wage cuts reduce staff effort	3.36	91.40	1
2 ... base wage cuts reduce staff morale	3.31	88.15	2
3 ... collective agreements are in place	3.29	79.58	4
4 ... the most productive employees would leave	3.25	85.58	3
5 ... base wage costs increase staff turnover costs	3.10	78.86	5
6 ... base wage cuts negatively affect the firm's image	2.99	70.85	6
7 ... employees might feel they earn less than others	2.83	70.75	7
8 ... implicit contracts are in place	2.29	43.95	8

Source: WDN survey of firms.

## 2.2 Fear of Eroding Staff Morale and Reducing Effort Prevents Wage Cuts

Within the scope of this survey, Austrian firms were also asked why they would avoid wage cuts. Respondents were presented with eight theories explaining downward nominal wage rigidities (for a summary of the results, see table 4).

Firms were asked to assign a score from 1 (irrelevant) to 4 (highly relevant) to each theory. Column 1 in table 4 gives an estimate of the mean value of all scores assigned, ranking the theories according to the average number of scores achieved. In an alternative ranking approach, ratings of 3 (relevant) and 4 (highly relevant) are interpreted as approval of a theory, whereas 1 (irrelevant) and 2 (of little relevance) are rated as disapproval. Column 2 in table 4 indicates the rate of approval by theory according to this alternative approach. Column 3 shows that ranking the theories in line with the alternative approach largely corresponds to ranking them by the mean value. However, the ranking itself shall not be overrated in the following interpretation of the results. The mean values of the theories with a top ranking lie within a very narrow band and, correspondingly, all theories

reaching an average score of more than 3 or gaining the approval of almost 80% of respondents shall be deemed widely accepted explanations of nominal wage rigidities.

The findings summarized in table 4 basically confirm previous results found in survey literature. As in Campbell and Kamlani (1997), the theory on employees' effort (1), the thesis on employees' morale (2), the "adverse selection model applied to quits" (4) as well as the turnover model (5) obtain high rates of approval also in this survey. All these explanatory models belong to the family of efficiency wage theories. Apart from the traditional theories describing the reasons for wage rigidities, in Austria the institutional framework conditions, such as collective agreements (3), also appear to play a role in explaining wage rigidities.

The theory that wage cuts would reduce the employees' effort (1) recorded a 90% approval rate. The theory described in detail by Bewley (1995, 1998, 1999) that wage cuts reduce employees' morale (2) and, as a consequence, their effort finds similarly high acceptance with the respondents.

Almost 80% of firms agreed that collective agreements prevent wage cuts (3). In strictly contractual terms,

collective agreements can prevent wage cuts only in cases where the agreed minimum wages are being paid in the first place, as the collective agreement stipulates that wages must not fall below that level. However, it cannot be ruled out that firms' answers to this question also reflect the social pressure associated with collective wage agreements, which makes it difficult for them to cut wages while they are being raised in comparable firms.

Furthermore, the adverse selection model applied to quits (4) appears to be widely accepted. Around 86% of firms agreed that the most productive employees would leave the company following a wage cut. This conforms to the findings of Campbell and Kamlani (1997) who also report high approval rates for this theory. Thus, the adverse selection model provides another explanation for the question why firms prefer dismissals to wage cuts. While wage cuts cause the most productive employees to leave the firm, dismissals may be used selectively to lay off less productive employees. Finally, also the theory on increased staff turnover (5) receives an average score of more than 3, with the approval rate being just below 80%. According to this theory, firms are reluctant to cut wages because this would make more employees leave the firm and entail higher costs for hiring and training new staff. This theory, too, ranks high in Campbell and Kamlani (1997) as well as in Blinder and Choi (1990).

At an approval rate of about 70%, somewhat less relevance seems to be attributed to the thesis that wage cuts have a negative effect on a firm's reputation (6) and that hiring new staff would be more difficult in the future. The rate of approval to Keynes' (1936) argument that wage hierarchy is important for employees (7) points into the

same direction. According to this theory, employees oppose wage cuts that do not equally affect the overall distribution of wages.

Acceptance is found to be lowest for the theory of implicit contracts (8). Like the surveyed firms in Blinder and Choi (1990), only few Austrian firms (close to 44%) think that wage rigidities are caused by an implicit contract between firms and employees. According to the implicit contract, pay does not fluctuate with the business cycle and thus, risk-averse employees can keep their standard of living constant over the business cycle. The implicit contract would therefore prevent wage cuts in phases of low demand. While implicit contracts are important in explaining price rigidities in Austria, as described in Kwapil et al. (2005), they seem to have considerably less relevance for explaining wage rigidities.

### 2.3 Wage Cuts are Rare also in Other EU Countries

The survey results for the euro area and the full sample presented in table 5 confirm that – both in Austria and in other EU countries – companies rarely consider cuts in base wages. Across the full sample, 1.7% of companies stated that they would cut base wages following a demand shock.

While the results for the individual cost-cutting categories (table 5) are quite similar for Austria, the euro area as well as the full sample, the willingness to discontinue temporary employment contracts differs widely. In Austria, only about 6% of respondents indicate that they use temporary employment contracts to buffer costs following demand shocks. In the euro area, however, 30% of respondents agree to this question, while across the full sample agreement is at about 25%. These figures show that the use of temporary



Table 5

**Cost-Cutting Strategies Across EU Countries**

Possible strategy	Approval rate for		
	Austria	the euro area	the full sample
	%		
Cut nonlabor costs	55.31	35.83	39.07
Cut working hours	14.90	9.53	8.59
Cut flexible wage components	12.55	9.12	10.61
Dismiss parts of the core workforce	10.91	13.76	15.64
Discontinue temporary employment contracts	6.33	30.06	24.39
Cut base wages	0.00	1.70	1.70

Source: WDN survey of firms.

Note: Euro area data cover ten countries only. Data on Germany, Finland, Luxembourg, Malta, Slovakia and Cyprus are not included. The full sample comprises the ten euro area countries covered plus Estonia, Lithuania, Poland, the Czech Republic and Hungary.

employment contracts as cost-cutting instruments is far more frequent in other EU countries than in Austria.

Data on the share of temporary employees in the total labor pool suggest that this type of employment is neither really widespread in Austria in general nor in the firms questioned in this survey in particular. The Eurostat data in table 6 show that Austria, with a share

of almost 9% of temporary employment contracts, is rather at the lower end among European countries. At more than 20%, the share of temporary employment is substantially higher in Portugal and Spain as well as in Poland. Since data on the share of temporary employment were also collected in the present survey, the “official” Eurostat data can be compared with

Table 6

**Share of Temporary Employment in Total Employment**

	Eurostat (annual data for 2007)	WDN survey of firms
	%	
Estonia	2.1	2.5
Lithuania	3.5	3.8
Hungary	7.3	5.9
Ireland	7.3	5.1
Belgium	8.6	2.7
Czech Republic	8.6	10.3
Austria	8.9	3.6
Greece	10.9	10.8
Italy	13.2	8.4
France	14.4	5.7
Netherlands	18.1	5.1
Slovenia	18.5	15.9
Portugal	22.4	22.4
Poland	28.2	19.7
Spain	31.7	18.9

Source: Eurostat, WDN survey of firms.

Table 7

**Employment Protection Legislation (EPL) Index**

	Temporary employment	EPL total
Czech Republic	0.5	2.0
Ireland	0.6	1.3
Hungary	1.1	1.7
Netherlands	1.2	2.3
Poland	1.3	2.1
Estonia	1.3	2.3
Austria	1.5	2.2
Italy	2.1	2.4
Slovenia	2.3	2.6
Lithuania	2.4	2.8
Belgium	2.6	2.5
Portugal	2.8	3.5
Greece	3.3	2.9
Spain	3.5	3.1
France	3.6	2.9

Source: OECD, *Employment Outlook 2004*; Tonin (2005).

Note: Data on the Czech Republic, Estonia, Slovenia and Lithuania from Tonin (2005).

firms' responses in this sample. Given varying degrees of coverage, however, the results do not fully coincide. While the Eurostat data cover the economy as a whole, this survey only covers sectors D through K. Still, the responses given in the WDN survey reflect the country ranking relatively well. Especially for Austria, however, there is a relatively big difference between the Eurostat data and firms' responses to the WDN survey. The firms in this sample indicated that an average of 3.6% of employees were employed on a temporary basis. According to this survey, only Estonia and Belgium report an even lower share. As the firms represented in the WDN sample seem to employ fewer temporary workers than the official numbers suggest, the data for Austria presented in table 6 may be distorted slightly downward.

It would seem obvious to blame the legal framework for the low level of temporary employment in Austria. In fact, quite the opposite seems to be true. According to the OECD indicator on the degree of regulation of temporary employment given in column 1 of table 7, Austria is among the OECD countries with the lowest degree of regulation in temporary employment. Within the euro area, only the legal frameworks of Ireland and the Netherlands offer more leeway in handling temporary employment contracts.

Overall, the legal framework on temporary employment does not seem to convincingly explain why this concept is so widely used in other EU countries. The overall index of Employment Protection Legislation (EPL) is generally assumed to deliver a better explanation. In countries where overall employment protection is generally strong (i.e. countries with a high index figure in column 2 of table 7), there seems to be a high demand for tempo-

rary employment. Accordingly, Bertola et al. (2009) find that in these countries temporary employees are indeed more likely to be laid off after a supply shock.

#### **2.4 Relation between Firms' Characteristics and Cost-Cutting Strategies**

Another question the survey deals with is which firms use which cost-cutting strategy. In this context it is of particular interest to see which firms cut labor costs or nonlabor costs and, if they choose the first option, whether they would rather reduce the quantity or the price of labor input. In other words, the question is which firms are more likely to dismiss employees and which ones would rather respond by cutting wages? The results presented in section 2.1 show that no firm in this survey would cut base wages in response to a decline in demand. Yet, about 13% of the firms surveyed reported that they would cut flexible wage components. Significantly more firms, i.e. a total of about 32%, cut costs by reducing the quantity of labor input (reduction in working hours or layoffs). Which type of firm chooses which cost-cutting strategy? Can we identify a pattern for Austrian firms?

In the following, we will examine whether deciding on a specific cost-cutting strategy depends mainly on the shape of the respective firm's production function or whether market characteristics, e.g. the intensity of competition, or the institutional framework also play a role. To analyze the effect of inputs in the production function, we proxy the capital-labor ratio by the share of labor costs in total costs. On average across all firms, labor costs account for roughly 37% of total costs. Also, the type of labor input may be relevant in explaining the choice of the cost-cut-

ting strategy. An important feature in this context is the distinction between blue- and white-collar workers. While blue-collar workers tend to do manual work (e.g. craftsmen or system and machine operators), white-collar workers are more frequently found in administrative jobs or as executives. The variable “share of blue-collar workers” in total staff is used to account for this characteristic. The average share of blue-collar workers in this sample is around 57%. Another important feature in analyzing the labor input is the type of contract. A firm that uses temporary employment contracts might rather dismiss temporary employees than the core workforce if there is a decline in demand. This question is examined by using the variable “share of temporary employees.” As already mentioned, firms reported that an average of close to 4% of their total staff had temporary employment contracts.

Furthermore, we will also analyze the impact the competitive situation has on the decision as to which cost-cutting strategy to choose, using the variables “competition” and “export share.” To map the price competitiveness of the firms surveyed, respondents were asked, as in Fabiani et al. (2006), to indicate on a scale from 1 (“very likely”) to 4 (“very unlikely”) whether they would lower their prices if their main competitor did so. In the following analysis, this information is described by a dummy variable: All firms that are very likely to follow their main competitor’s price reduction are defined as being exposed to strong price competition (= 1) and the remaining firms, by definition, as facing only weak competition (= 0). The survey showed that, by their own account,

87% of firms experience rather weak price competition, while 13% can be regarded as price takers. The “export share” variable follows a very similar idea of price taking. The export share indicates how many percent of the respective firm’s goods and services are sold outside Austria (26% on average). Firms with a high export share are deemed more likely to be price takers than firms that primarily operate in the domestic market. Since the correlation between the “competition” and “export share” variables is low, both will be used as exogenous variables in the following analysis.

To analyze whether the institutional framework on the labor market also has an impact on the type of cost-cutting strategies used, we take a look at the degree by which employment is covered by collective agreements. Firms were asked to indicate the share of employees whose employment contracts are covered by a collective agreement. The average coverage across the sample is roughly 95% and thus corresponds to the findings of Bönisch (2008), who finds collective agreement coverage rates of around 94%.<sup>3</sup> Beyond collective agreements, firms can negotiate internal wage settlements. To assess the impact of this type of wage negotiation, we use the variable “company agreement,” defined as a dummy variable. The roughly 22% of firms that conclude such an internal wage agreement are coded 1, the remaining firms are coded 0.

Finally, the size of firms, the sector in which they operate and the economic situation at the time the survey was conducted are used as control variables. The size of a firm is equated with the number of employees which, on aver-

<sup>3</sup> In his calculation of average collective agreement coverage rates, Bönisch (2008) also considers agriculture and forestry, which are not included in the present sample.

age across the sample, is about 206. In addition, we distinguish between six economic sectors (manufacturing, energy, construction, trade, other services and financial intermediation). Firms' economic situation was captured in the survey by a question on the development of total turnover against the previous year. Firms could choose from five categories of answers, ranging from sales being considerably higher to sales being considerably lower than the year before. Table 8 shows that the economic situation was satisfactory for most of the firms surveyed; less than 10% of firms faced declining sales.

Table 8

#### Development of Total Turnover in the Survey Year

	% of respondents
Considerably higher	24.17
Higher	45.20
About the same	21.96
Lower	6.46
Considerably lower	2.21

Source: WDN survey of firms.

To analyze the impact of firms' characteristics as well as of the competitive and institutional framework on the decision to cut costs after a demand shock, we estimate a multinomial logit model, whose results are presented in table 9. The values given represent marginal effects that indicate the change in probability that a specific cost-cutting strategy will be chosen if a specific characteristic increases by one unit. The last column of table 9 shows the point at which the marginal effects are evaluated. Usually, they refer to mean values, while in the case of categorical variables, the most common category served as point of reference.

The results presented in table 9 suggest that the share of labor costs in total

costs has a significant impact on choosing a cost-cutting strategy. A 10 percentage point increase in the share of labor costs would increase the probability that parts of the core workforce would be dismissed by about 2 percentage points. This means that in case of a demand shock, *ceteris paribus*, dismissals are more likely to take place in labor-intensive than in capital-intensive firms. Furthermore, firms with a high share of blue-collar workers and a low share of white-collar workers tend to reduce working hours and dismiss staff, whereas they are considerably more reluctant to cut nonlabor costs. An increase in the share of blue-collar workers by 10 percentage points would thus reduce the probability for cuts in nonlabor costs by about 3 percentage points. By contrast, the type of employment contracts (temporary vs. permanent) does not seem to have an effect on cost cuts, probably because temporary employment contracts play a minor role in Austria in general (section 2.3).

Firms' competitive situation also seems to have a certain influence on the decision as to which costs will be cut as a result of declining demand. While the effect of competition on the cost-cutting strategy is not significantly different from zero, export-oriented firms tend more toward cutting labor costs than nonlabor costs.

Table 9 also shows that neither collective agreements nor internal wage agreements have a significant impact on the probability of dismissals or wage cuts. While collective agreements have no impact on Austrian firms' cost-cutting strategies, the findings of Bertola et al. (2009), which are based on the same survey of firms but use data from 14 EU countries, show a strong correlation between collective agreements and cost cuts. If employment contracts are covered by collective agreements,

Table 9

**Logit Estimation of Factors Influencing the Choice of Cost-Cutting Strategies (Marginal Effects)**

	Cut flexible wage components	Cut working hours	Discontinue temporary employment contracts	Dismiss parts of the core workforce	Cut nonlabor costs	Values at which marginal effects are calculated
Share of labor costs in total costs	0.03 (0.07)	-0.13 (0.10)	0.04 (0.04)	0.19 ** (0.09)	-0.14 (0.16)	36.81%
Share of blue-collar workers	-0.01 (0.04)	0.17 ** (0.07)	0.01 (0.02)	0.09 *** (0.04)	-0.26 *** (0.09)	56.95%
Share of temporary employees	-0.08 (0.11)	-0.02 (0.12)	0.07 (0.05)	-0.05 (0.10)	0.09 (0.20)	3.91%
Export share	0.03 (0.03)	0.07 (0.06)	0.06 ** (0.03)	0.03 (0.04)	-0.19 ** (0.08)	25.58%
Competition (strong/weak)	-0.05 * (0.03)	0.02 (0.06)	-0.00 (0.02)	0.03 (0.04)	0.01 (0.08)	Weak competition
Collective agreement (coverage rate)	-0.03 (0.05)	0.17 (0.17)	0.01 (0.02)	-0.03 (0.05)	-0.11 (0.16)	95.20%
Internal wage agreement (yes/no)	-0.03 (0.02)	0.03 (0.05)	0.00 (0.01)	0.01 (0.03)	-0.01 (0.07)	No agreement
Company size (number of employees)	0.00 * (0.00)	-0.00 * (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 ** (0.00)	206.16
Economic situation	-0.01 (0.01)	0.02 (0.02)	0.01 (0.01)	0.00 (0.01)	-0.03 (0.02)	Higher turnover
Number of observations	304	304	304	304	304	
Pseudo log likelihood	-359.22	-359.22	-359.22	-359.22	-359.22	
Pseudo R <sup>2</sup>	0.10	0.10	0.10	0.10	0.10	

Source: WDN survey of firms.

Note: The model includes sectoral dummies that are not reported. Rounded standard errors are given in parentheses. \*\*\*, (\*\*), [\*] denote significance at the 1%, (5%), [10]% level.

firms show a tendency to cut costs by dismissing temporary employees rather than by cutting wages.

Finally, Austrian firms prefer different types of cost-cutting, depending on the sector they operate in. Also, the firm's size seems to have a certain influence on the cost-cutting strategy. However, since both variables – size and sector – are intended to capture all the unobserved characteristics that are correlated with them but cannot be depicted by a separate variable, a detailed interpretation of the coefficients shall be omitted.

### 3 Summary

The results of the company survey indicate that about 80% of the firms surveyed in Austria cut costs in response to a demand shock. Usually

this is not their only response to declining demand, firms tend to adopt packages of measures, one of which is cutting costs. A graphic interpretation of the survey results (charts 1 and 2) suggests that firms try to counter the drop in demand by reducing costs. Accordingly, cost cuts can be assumed to dampen the demand shock, with cuts in nonlabor costs being the dominant feature of cost cuts. While about 45% of firms reported that they would mainly cut labor costs, 55% indicated that they preferred reducing nonlabor costs in response to a demand shock.

Close similarity between Austria, the euro area and the full sample of EU countries is reflected in the phenomenon that, as a result of demand shocks, firms are more likely to dismiss work-

ers than cut their base wages. This phenomenon has already been widely discussed in the literature and a number of possible explanations have been found. In this survey successful theories explaining nominal wage rigidities were tested and firms were given eight different explanations for rigid wages to choose from. Among these theories, efficiency wage theories score particularly well with Austrian firms. In line with these theories, firms are reluctant to cut wages mainly because they fear a loss of staff effort and productivity as well as higher staff fluctuation and – subsequently – higher hiring and training costs.

There is a clear difference between Austria and the average of the other EU countries in the use of temporary employment contracts. By comparison, the number of temporary employment contracts concluded in Austria is significantly lower than in the other EU countries, which is why they are used

significantly less often as cost buffers after demand shocks.

Finally, the survey results suggest that cost-cutting strategies are more likely to depend on firms' technology (labor intensity of production, share of blue-collar workers versus share of white-collar workers, sector, etc.) than on their institutional and economic environment (collective agreement, internal wage agreements, economic situation, etc.). In particular, labor-intensive firms with a high share of blue-collar workers are more likely to lay off employees in reaction to a demand shock and less likely to cut nonlabor costs. The same is true for export-oriented firms, which are also less likely to cut nonlabor costs. Moreover, the results of this study indicate that the wage rigidities depicted by collective agreements and wage agreements at the firm level do not have an influence on the probability of dismissals or other cost cuts that would be of relevance for the labor market.

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