

KOF Konjunkturforschungsstelle**KOF Wholesale Trade Survey
Empirical Applications**

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1 Introduction

KOF business tendency surveys provide a wide range of indicators which reflect the economic situation and can therefore be applied for business cycle monitoring and analysis. The early availability of the survey data (compared to official statistics) is one of its advantages. This document aims to illustrate few of the possible applications of KOF survey data. For this purpose, we document some of its characteristics, for example correlations between the survey variables and macroeconomic variables, such as wholesale trade turnovers and GDP. The questionnaires have questions about the past developments, current situation as well as future plans (expectations). In Table 1 the start period of each question and its reference period are documented.

Table 1: Start date of quarterly questions

Question	Start date	Type
Business situation, assessment	2007 Q3	Current
Business situation, expected change next 6 months	2007 Q3	Future
Competitive position, change past 3 months	2007 Q3	Past
Delivery times, change previous quarter compared to same quarter of previous year	1977 Q4	Past
Delivery times, expected change next 3 months	1977 Q4	Future
Demand, change past 3 months	2007 Q3	Past
Demand, expected change next 3 months	2007 Q3	Future
Number of employees, assessment	2007 Q3	Current
Number of employees, change past 3 months	2007 Q3	Past
Number of employees, expected change next 3 months	2007 Q3	Future
Profit situation, change past 3 months	2007 Q3	Past
Purchase prices, expected change next 3 months	1977 Q4	Future
Sales prices, expected change next 3 months	1977 Q4	Future
Technical facilities, assessment	2007 Q3	Current
Volume of sales of goods, change previous quarter compared to same quarter of previous year	1977 Q4	Past
Volume of stock, assessment	1977 Q4	Current
Volume of stock, change previous quarter compared to same quarter of previous year	1977 Q4	Past
Obstacle economic and legal circumstances	2007 Q3	Current
Obstacle financial constraints	2007 Q3	Current
Obstacle insufficient demand	2007 Q3	Current
Obstacle insufficient technical equipment	2007 Q3	Current
Obstacle shortage of labour	2007 Q3	Current
No obstacles	2007 Q3	Current

2 Correlation Analysis Overview

To examine if the survey variables are rather forward-looking or contemporaneous indicators, the cross-correlations at different lags are documented. When calculating the

correlations for the survey variables referring to past, one should keep in mind that these should be actually shifted by one period back (i.e., lagged). This is because the firms are asked for example early January how the change in turnover in the previous month (i.e., December) was compared to the month or year before. Therefore, the value of January is actually indicating the development in December and should be compared to the other macroeconomic indicators in that month.

The following tables show the cross-correlations of the quarterly survey variables with various macroeconomic variables (see Table 2) for the last 8 years. In Table 3 we present for each survey variable the macroeconomic variable with the highest (absolute) correlation and at which lag. If the highest correlation is found for negative values (leads), this means that the survey variable in question is leading the macroeconomic variable. In general, higher correlations are found with year-on-year (yoY) growth rates than with quarter-on-quarter (qoq) changes. In Figures 1-6 few example plots are presented.

Table 4 documents the (absolute) highest contemporaneous correlations for each survey variable and Table 5 shows the absolute highest correlations when survey variables are leaded.

Table 2: Macroeconomic variables

Key	Description	Frequency	Source
ts_gdp_nom_qoq	Nominal GDP qoq	Quarterly	SECO
ts_gdp_nom_yoy	Nominal GDP yoY	Quarterly	SECO
ts_gdp_real_qoq	Real GDP qoq	Quarterly	SECO
ts_gdp_real_yoy	Real GDP yoY	Quarterly	SECO
ts_wtt_yoy	Wholesale trade turnover yoY	Quarterly	BFS
ts_wtt_qoq	Wholesale trade turnover qoq	Quarterly	BFS
ts_ind_qoq	Industrial production qoq	Quarterly	BFS
ts_ind_yoy	Industrial production yoY	Quarterly	BFS
ts_exp_nom_qoq	Nominal export of goods qoq	Monthly	EZV
ts_exp_nom_yoy	Nominal export of goods yoY	Monthly	EZV
ts_imp_nom_qoq	Nominal import of goods qoq	Monthly	EZV
ts_imp_nom_yoy	Nominal import of goods yoY	Monthly	EZV
ts_rtt_nom_qoq	Nominal retail trade turnover qoq	Monthly	BFS
ts_rtt_nom_yoy	Nominal retail trade turnover yoY	Monthly	BFS
ts_rtt_real_qoq	Real retail trade turnover qoq	Monthly	BFS
ts_rtt_real_yoy	Real retail trade turnover yoY	Monthly	BFS
ts_emp_yoy	Wholesale trade full-time employment yoY	Quarterly	BFS
ts_emp_qoq	Wholesale trade full-time employment qoq	Quarterly	BFS
ts_ppi_qoq	Producer price index qoq	Monthly	BFS
ts_ppi_yoy	Producer price index yoY	Monthly	BFS

Table 3: Highest correlations

Question	Macro variable	Correlation	Lead(-)/Lag(+)
Business situation, assessment	ts_gdp_nom_yoy	0.70	1
Business situation, expected change next 6 months	ts_gdp_nom_yoy	0.79	-1
Competitive position, change past 3 months	ts_gdp_nom_yoy	0.73	0
Delivery times, change previous quarter compared to same quarter of previous year	ts_gdp_nom_yoy	0.76	1
Delivery times, expected change next 3 months	ts_gdp_nom_yoy	0.76	0
Demand, change past 3 months	ts_gdp_nom_yoy	0.77	0
Demand, expected change next 3 months	ts_gdp_nom_yoy	0.83	0
Number of employees, assessment	ts_gdp_nom_yoy	-0.63	1
Number of employees, change past 3 months	ts_wtt_yoy	0.66	1
Number of employees, expected change next 3 months	ts_wtt_yoy	0.58	0
Profit situation, change past 3 months	ts_gdp_nom_yoy	0.72	0
Purchase prices, expected change next 3 months	ts_imp_nom_yoy	0.77	0
Sales prices, expected change next 3 months	ts_imp_nom_yoy	0.78	1
Technical facilities, assessment	ts_gdp_nom_yoy	-0.56	2
Volume of sales of goods, change previous quarter compared to same quarter of previous year	ts_gdp_nom_yoy	0.75	0
Volume of stock, assessment	ts_gdp_real_yoy	-0.66	0
Volume of stock, change previous quarter compared to same quarter of previous year	ts_wtt_yoy	0.70	1
Obstacle economic and legal circumstances	ts_ppi_yoy	-0.66	1
Obstacle financial constraints	ts_gdp_real_yoy	-0.57	1
Obstacle insufficient demand	ts_gdp_nom_yoy	-0.75	1
Obstacle insufficient technical equipment	ts_gdp_nom_yoy	0.54	2
Obstacle shortage of labour	ts_wtt_yoy	0.66	2
No obstacles	ts_gdp_nom_yoy	0.60	1

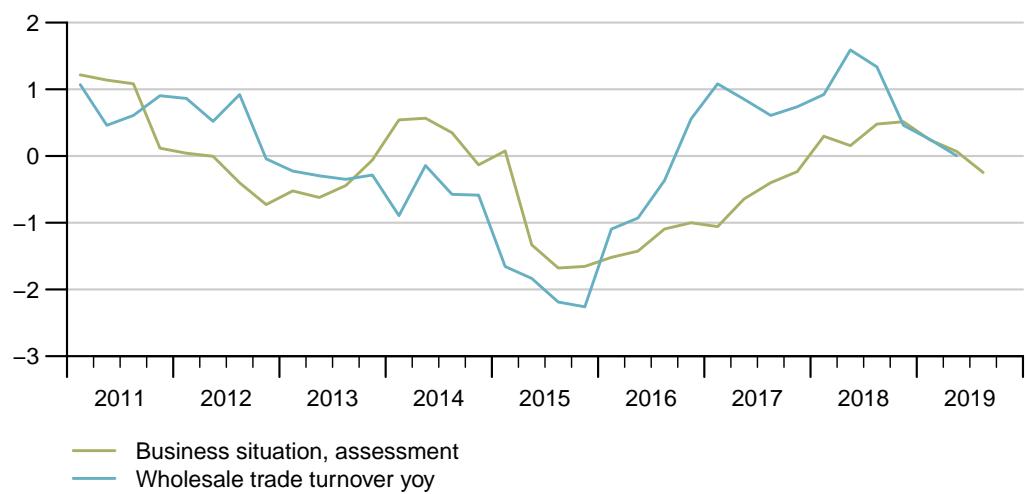


Figure 1: Business situation assessment and wholesale trade turnover yoy

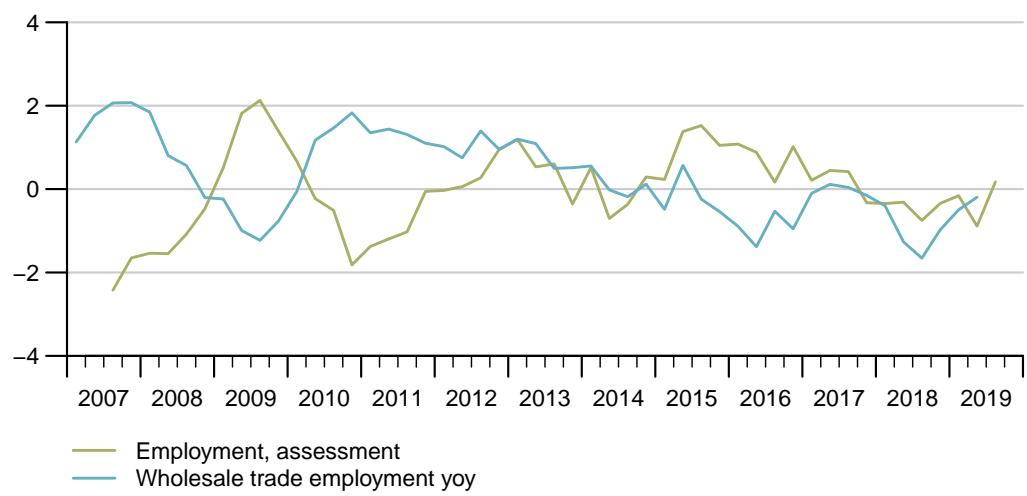


Figure 2: Employment assessment and wholesale trade employment yoy

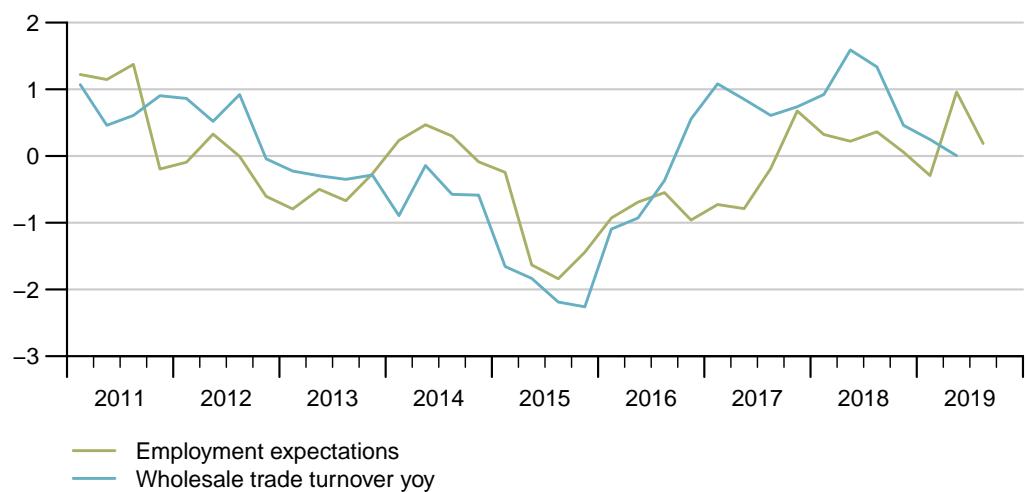


Figure 3: Employment expectations and wholesale trade turnover yoy

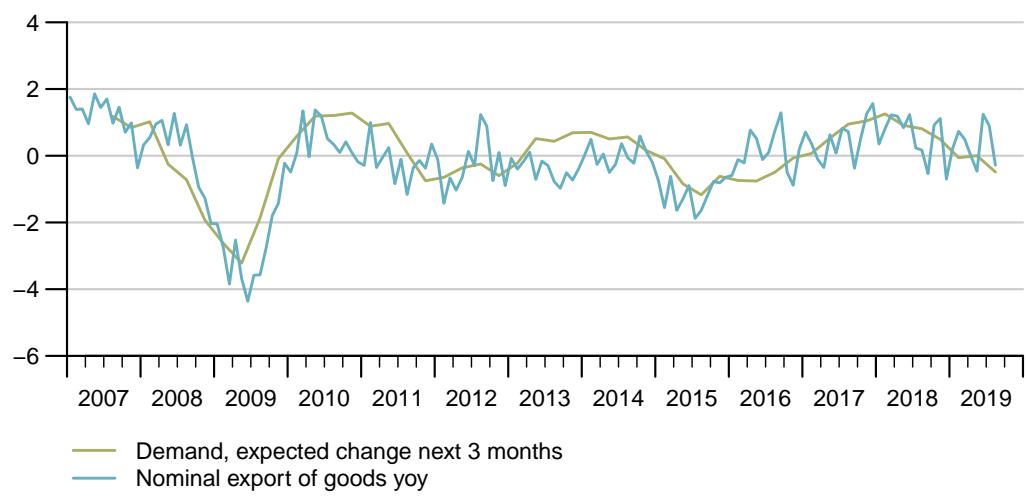


Figure 4: Demand expected change next 3 months and nominal export of goods yoy



Figure 5: Profit situation change past 3 months and industrial production yoy



Figure 6: Sales prices expected change next 3 months and producer price index yoy

Table 4: Highest contemporaneous correlations

Survey variable	Macro variable	Correlation
Business situation, assessment	ts_gdp_nom_yoy	0.62
Business situation, expected change next 6 months	ts_gdp_nom_yoy	0.78
Competitive position, change past 3 months	ts_gdp_nom_yoy	0.73
Delivery times, change previous quarter compared to same quarter of previous year	ts_gdp_nom_yoy	0.71
Delivery times, expected change next 3 months	ts_gdp_nom_yoy	0.76
Demand, change past 3 months	ts_gdp_nom_yoy	0.77
Demand, expected change next 3 months	ts_gdp_nom_yoy	0.82
Number of employees, assessment	ts_wtt_yoy	-0.60
Number of employees, change past 3 months	ts_wtt_yoy	0.60
Number of employees, expected change next 3 months	ts_wtt_yoy	0.58
Profit situation, change past 3 months	ts_gdp_nom_yoy	0.72
Purchase prices, expected change next 3 months	ts_imp_nom_yoy	0.77
Sales prices, expected change next 3 months	ts_gdp_nom_yoy	0.77
Technical facilities, assessment	ts_gdp_nom_yoy	-0.25
Volume of sales of goods, change previous quarter compared to same quarter of previous year	ts_gdp_nom_yoy	0.76
Volume of stock, assessment	ts_gdp_real_yoy	-0.66
Volume of stock, change previous quarter compared to same quarter of previous year	ts_wtt_yoy	0.63
Obstacle economic and legal circumstances	ts_ppi_yoy	-0.65
Obstacle financial constraints	ts_gdp_real_yoy	-0.40
Obstacle insufficient demand	ts_gdp_nom_yoy	-0.58
Obstacle insufficient technical equipment	ts_emp_yoy	-0.27
Obstacle shortage of labour	ts_wtt_yoy	0.48
No obstacles	ts_gdp_nom_yoy	0.56

Table 5: Highest correlations at lead (-1)

Survey variable	Macro variable	Correlation
Business situation, assessment	ts_gdp_nom_yoy	0.41
Business situation, expected change next 6 months	ts_gdp_nom_yoy	0.80
Competitive position, change past 3 months	ts_gdp_nom_yoy	0.60
Delivery times, change previous quarter compared to same quarter of previous year	ts_ind_yoy	0.51
Delivery times, expected change next 3 months	ts_gdp_nom_yoy	0.66
Demand, change past 3 months	ts_gdp_nom_yoy	0.65
Demand, expected change next 3 months	ts_gdp_nom_yoy	0.81
Number of employees, assessment	ts_wtt_yoy	-0.48
Number of employees, change past 3 months	ts_wtt_yoy	0.49
Number of employees, expected change next 3 months	ts_wtt_yoy	0.51
Profit situation, change past 3 months	ts_gdp_nom_yoy	0.59
Purchase prices, expected change next 3 months	ts_gdp_nom_yoy	0.76
Sales prices, expected change next 3 months	ts_gdp_nom_yoy	0.77
Technical facilities, assessment	ts_imp_nom_yoy	0.35
Volume of sales of goods, change previous quarter compared to same quarter of previous year	ts_gdp_nom_yoy	0.61
Volume of stock, assessment	ts_gdp_real_yoy	-0.52
Volume of stock, change previous quarter compared to same quarter of previous year	ts_ind_yoy	0.55
Obstacle economic and legal circumstances	ts_rtt_real_yoy	-0.56
Obstacle financial constraints	ts_gdp_real_yoy	-0.34
Obstacle insufficient demand	ts_ppi_qoq	0.34
Obstacle insufficient technical equipment	ts_rtt_real_qoq	0.28
Obstacle shortage of labour	ts_rtt_real_yoy	0.48
No obstacles	ts_emp_yoy	0.38

3 Detailed Correlation Analysis

3.1 GDP

Table 6: Cross-correlations with real GDP yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.303	-0.215	-0.017	0.226	0.457	0.528	0.414	0.192	-0.043
Business situation, expected change next 6 months	-0.122	0.044	0.343	0.633	0.776	0.442	0.099	-0.152	-0.311
Competitive position, change past 3 months	-0.143	-0.024	0.193	0.321	0.358	0.231	0.012	-0.129	-0.229
Delivery times, change previous quarter compared to same quarter of previous year	-0.305	-0.180	0.096	0.424	0.733	0.689	0.494	0.251	-0.019
Delivery times, expected change next 3 months	-0.198	-0.049	0.281	0.567	0.715	0.449	0.177	-0.062	-0.308
Demand, change past 3 months	-0.209	-0.063	0.201	0.473	0.654	0.517	0.225	-0.059	-0.277
Demand, expected change next 3 months	-0.168	-0.004	0.338	0.686	0.866	0.498	0.138	-0.110	-0.288
Number of employees, assessment	0.294	0.236	-0.022	-0.328	-0.590	-0.597	-0.411	-0.219	0.009
Number of employees, change past 3 months	-0.307	-0.259	-0.086	0.150	0.432	0.584	0.505	0.331	0.125
Number of employees, expected change next 3 months	-0.290	-0.175	0.094	0.409	0.617	0.499	0.230	-0.015	-0.177
Profit situation, change past 3 months	-0.210	-0.081	0.183	0.439	0.631	0.542	0.247	-0.042	-0.272
Purchase prices, expected change next 3 months	-0.155	-0.018	0.255	0.496	0.679	0.490	0.312	0.147	-0.036
Sales prices, expected change next 3 months	-0.120	0.012	0.267	0.479	0.624	0.457	0.254	0.097	-0.084
Technical facilities, assessment	0.222	0.260	0.139	-0.040	-0.256	-0.383	-0.406	-0.446	-0.291
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.247	-0.114	0.126	0.399	0.636	0.639	0.448	0.133	-0.150
Volume of stock, assessment	0.107	0.020	-0.291	-0.592	-0.801	-0.464	-0.141	0.020	0.169
Volume of stock, change previous quarter compared to same quarter of previous year	-0.253	-0.187	-0.039	0.220	0.491	0.658	0.610	0.450	0.275
Obstacle economic and legal circumstances	0.074	0.007	-0.109	-0.123	-0.112	-0.052	0.050	0.140	0.216
Obstacle financial constraints	0.178	0.190	0.087	-0.145	-0.420	-0.693	-0.695	-0.555	-0.327
Obstacle insufficient demand	0.353	0.284	0.135	-0.069	-0.286	-0.488	-0.450	-0.253	-0.025
Obstacle insufficient technical equipment	-0.175	-0.129	0.028	0.107	0.277	0.413	0.306	0.196	0.110
Obstacle shortage of labour	-0.276	-0.209	-0.071	0.066	0.274	0.305	0.293	0.292	0.150
No obstacles	-0.307	-0.230	-0.072	0.086	0.205	0.329	0.296	0.141	-0.085

Table 7: Cross-correlations with real GDP qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.352	-0.384	-0.242	-0.146	-0.031	0.221	0.307	0.300	0.268
Business situation, expected change next 6 months	-0.245	-0.260	-0.005	0.066	0.375	0.466	0.391	0.246	0.083
Competitive position, change past 3 months	-0.228	-0.314	-0.035	0.041	0.228	0.468	0.356	0.238	0.145
Delivery times, change previous quarter compared to same quarter of previous year	-0.394	-0.437	-0.182	-0.121	0.076	0.215	0.287	0.397	0.391
Delivery times, expected change next 3 months	-0.323	-0.357	-0.059	-0.035	0.243	0.469	0.374	0.304	0.241
Demand, change past 3 months	-0.340	-0.345	-0.098	0.009	0.201	0.392	0.385	0.309	0.233
Demand, expected change next 3 months	-0.288	-0.330	-0.037	0.021	0.328	0.452	0.359	0.216	0.095
Number of employees, assessment	0.225	0.438	0.280	0.138	0.025	-0.290	-0.228	-0.238	-0.228
Number of employees, change past 3 months	-0.262	-0.378	-0.245	-0.242	-0.105	0.151	0.194	0.219	0.270
Number of employees, expected change next 3 months	-0.347	-0.418	-0.227	-0.086	0.069	0.322	0.291	0.145	0.124
Profit situation, change past 3 months	-0.305	-0.315	-0.121	-0.047	0.184	0.460	0.352	0.272	0.222
Purchase prices, expected change next 3 months	-0.213	-0.315	-0.034	-0.012	0.297	0.354	0.276	0.315	0.174
Sales prices, expected change next 3 months	-0.177	-0.221	-0.023	-0.004	0.314	0.455	0.299	0.273	0.192
Technical facilities, assessment	-0.033	0.212	0.322	0.249	0.151	-0.131	0.092	-0.148	-0.236
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.352	-0.363	-0.152	-0.045	0.136	0.336	0.412	0.370	0.298
Volume of stock, assessment	0.132	0.215	-0.008	0.092	-0.216	-0.414	-0.242	-0.242	-0.056
Volume of stock, change previous quarter compared to same quarter of previous year	-0.261	-0.267	-0.213	-0.157	-0.035	0.144	0.213	0.135	0.275
Obstacle economic and legal circumstances	0.114	0.103	-0.020	0.078	-0.145	-0.367	-0.165	-0.039	-0.041
Obstacle financial constraints	0.143	0.193	0.173	0.158	0.198	-0.096	-0.245	-0.104	-0.219
Obstacle insufficient demand	0.414	0.385	0.309	0.201	0.169	-0.151	-0.314	-0.350	-0.425
Obstacle insufficient technical equipment	-0.280	-0.361	0.054	-0.017	-0.116	0.126	0.031	0.229	0.335
Obstacle shortage of labour	-0.268	-0.304	-0.168	-0.243	-0.035	0.046	-0.099	0.139	0.117
No obstacles	-0.314	-0.380	-0.304	-0.166	-0.020	0.217	0.265	0.224	0.390

Table 8: Cross-correlations with nominal GDP yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.237	-0.114	0.119	0.400	0.639	0.723	0.619	0.394	0.151
Business situation, expected change next 6 months	-0.003	0.174	0.474	0.759	0.843	0.500	0.146	-0.123	-0.304
Competitive position, change past 3 months	0.028	0.156	0.366	0.515	0.542	0.410	0.179	0.021	-0.098
Delivery times, change previous quarter compared to same quarter of previous year	-0.259	-0.100	0.195	0.542	0.826	0.778	0.570	0.303	0.002
Delivery times, expected change next 3 months	-0.108	0.072	0.408	0.690	0.795	0.529	0.242	-0.029	-0.269
Demand, change past 3 months	-0.086	0.083	0.363	0.647	0.801	0.660	0.359	0.056	-0.183
Demand, expected change next 3 months	-0.103	0.081	0.429	0.773	0.907	0.544	0.188	-0.071	-0.262
Number of employees, assessment	0.262	0.169	-0.115	-0.445	-0.725	-0.738	-0.569	-0.373	-0.127
Number of employees, change past 3 months	-0.283	-0.208	-0.004	0.274	0.578	0.748	0.676	0.503	0.293
Number of employees, expected change next 3 months	-0.209	-0.074	0.216	0.537	0.754	0.652	0.403	0.165	-0.005
Profit situation, change past 3 months	-0.104	0.049	0.314	0.586	0.765	0.672	0.381	0.083	-0.166
Purchase prices, expected change next 3 months	-0.010	0.132	0.395	0.610	0.723	0.515	0.304	0.114	-0.072
Sales prices, expected change next 3 months	0.015	0.161	0.416	0.620	0.708	0.511	0.270	0.076	-0.123
Technical facilities, assessment	0.287	0.317	0.180	-0.053	-0.319	-0.480	-0.505	-0.496	-0.338
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.163	-0.007	0.250	0.539	0.761	0.762	0.556	0.221	-0.080
Volume of stock, assessment	0.194	0.084	-0.238	-0.576	-0.757	-0.427	-0.093	0.097	0.261
Volume of stock, change previous quarter compared to same quarter of previous year	-0.210	-0.155	-0.010	0.252	0.538	0.699	0.656	0.503	0.323
Obstacle economic and legal circumstances	-0.059	-0.171	-0.292	-0.346	-0.338	-0.275	-0.182	-0.085	0.011
Obstacle financial constraints	0.279	0.302	0.218	0.012	-0.256	-0.540	-0.567	-0.449	-0.263
Obstacle insufficient demand	0.270	0.158	-0.032	-0.270	-0.511	-0.705	-0.659	-0.442	-0.203
Obstacle insufficient technical equipment	-0.228	-0.149	0.007	0.154	0.363	0.513	0.408	0.275	0.149
Obstacle shortage of labour	-0.238	-0.134	0.043	0.233	0.482	0.527	0.510	0.489	0.310
No obstacles	-0.201	-0.064	0.125	0.313	0.438	0.549	0.520	0.352	0.114

Table 9: Cross-correlations with nominal GDP qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.309	-0.306	-0.149	-0.011	0.115	0.378	0.505	0.462	0.460
Business situation, expected change next 6 months	-0.147	-0.119	0.099	0.226	0.465	0.553	0.471	0.258	0.109
Competitive position, change past 3 months	-0.057	-0.105	0.094	0.208	0.391	0.622	0.543	0.354	0.284
Delivery times, change previous quarter compared to same quarter of previous year	-0.368	-0.337	-0.105	-0.012	0.172	0.326	0.388	0.473	0.446
Delivery times, expected change next 3 months	-0.287	-0.212	0.037	0.065	0.340	0.572	0.469	0.329	0.271
Demand, change past 3 months	-0.245	-0.191	0.030	0.172	0.336	0.540	0.538	0.412	0.339
Demand, expected change next 3 months	-0.245	-0.223	0.022	0.118	0.390	0.514	0.424	0.235	0.125
Number of employees, assessment	0.207	0.379	0.225	0.049	-0.096	-0.401	-0.373	-0.384	-0.366
Number of employees, change past 3 months	-0.249	-0.317	-0.203	-0.160	-0.007	0.278	0.372	0.362	0.446
Number of employees, expected change next 3 months	-0.288	-0.325	-0.120	0.025	0.176	0.448	0.446	0.292	0.277
Profit situation, change past 3 months	-0.215	-0.176	-0.020	0.089	0.315	0.561	0.490	0.388	0.330
Purchase prices, expected change next 3 months	-0.083	-0.118	0.115	0.129	0.391	0.450	0.324	0.259	0.164
Sales prices, expected change next 3 months	-0.060	-0.049	0.112	0.157	0.434	0.574	0.386	0.254	0.176
Technical facilities, assessment	0.013	0.238	0.369	0.277	0.112	-0.145	-0.057	-0.210	-0.392
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.292	-0.244	-0.053	0.090	0.238	0.456	0.548	0.461	0.385
Volume of stock, assessment	0.194	0.244	0.123	0.140	-0.170	-0.397	-0.262	-0.193	0.025
Volume of stock, change previous quarter compared to same quarter of previous year	-0.176	-0.172	-0.153	-0.126	0.010	0.195	0.261	0.189	0.317
Obstacle economic and legal circumstances	0.030	-0.039	-0.105	-0.128	-0.363	-0.521	-0.389	-0.225	-0.247
Obstacle financial constraints	0.237	0.247	0.217	0.277	0.340	0.044	-0.087	0.029	-0.141
Obstacle insufficient demand	0.373	0.291	0.168	0.054	-0.015	-0.346	-0.532	-0.552	-0.573
Obstacle insufficient technical equipment	-0.322	-0.300	-0.030	-0.004	-0.074	0.154	0.150	0.368	0.429
Obstacle shortage of labour	-0.249	-0.268	-0.116	-0.099	0.111	0.219	0.151	0.370	0.308
No obstacles	-0.278	-0.264	-0.169	0.018	0.210	0.412	0.463	0.418	0.560

3.2 Wholesale Trade Turnover

Table 10: Cross-correlations with wholesale trade turnover yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.202	-0.031	0.200	0.395	0.536	0.614	0.613	0.543	0.467
Business situation, expected change next 6 months	0.080	0.222	0.395	0.521	0.570	0.519	0.404	0.276	0.176
Competitive position, change past 3 months	0.006	0.187	0.400	0.524	0.588	0.569	0.475	0.381	0.249
Delivery times, change previous quarter compared to same quarter of previous year	0.150	0.280	0.404	0.449	0.497	0.502	0.429	0.348	0.248
Delivery times, expected change next 3 months	0.140	0.274	0.383	0.414	0.403	0.403	0.312	0.198	0.202
Demand, change past 3 months	0.063	0.249	0.438	0.564	0.628	0.585	0.496	0.355	0.260
Demand, expected change next 3 months	0.007	0.144	0.318	0.455	0.522	0.525	0.447	0.364	0.289
Number of employees, assessment	-0.038	-0.152	-0.383	-0.478	-0.601	-0.557	-0.478	-0.401	-0.346
Number of employees, change past 3 months	-0.069	0.122	0.344	0.486	0.601	0.660	0.590	0.506	0.417
Number of employees, expected change next 3 months	-0.025	0.152	0.378	0.509	0.584	0.574	0.519	0.446	0.388
Profit situation, change past 3 months	0.066	0.233	0.455	0.582	0.637	0.562	0.429	0.304	0.183
Purchase prices, expected change next 3 months	0.207	0.398	0.581	0.644	0.657	0.659	0.541	0.390	0.329
Sales prices, expected change next 3 months	0.118	0.283	0.487	0.571	0.585	0.568	0.443	0.332	0.265
Technical facilities, assessment	0.117	0.176	0.100	0.015	-0.076	-0.129	-0.209	-0.275	-0.251
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.028	0.197	0.376	0.496	0.545	0.524	0.447	0.324	0.228
Volume of stock, assessment	-0.220	-0.197	-0.217	-0.139	-0.057	0.040	0.196	0.272	0.300
Volume of stock, change previous quarter compared to same quarter of previous year	0.066	0.219	0.349	0.537	0.633	0.699	0.659	0.532	0.372
Obstacle economic and legal circumstances	0.168	0.021	-0.254	-0.464	-0.622	-0.653	-0.588	-0.574	-0.465
Obstacle financial constraints	0.139	0.099	0.065	-0.044	0.012	-0.182	-0.054	0.023	0.018
Obstacle insufficient demand	0.185	0.066	-0.087	-0.243	-0.379	-0.483	-0.538	-0.491	-0.452
Obstacle insufficient technical equipment	-0.116	-0.106	-0.037	-0.030	0.083	0.158	0.172	0.193	0.093
Obstacle shortage of labour	-0.134	0.030	0.243	0.331	0.479	0.558	0.657	0.740	0.681
No obstacles	-0.119	0.015	0.187	0.374	0.480	0.499	0.483	0.451	0.401

Table 11: Cross-correlations with wholesale trade turnover qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.198	-0.181	-0.013	0.160	0.138	0.338	0.451	0.445	0.376
Business situation, expected change next 6 months	0.004	0.062	0.158	0.210	0.303	0.408	0.450	0.294	0.149
Competitive position, change past 3 months	-0.074	-0.065	0.133	0.258	0.327	0.386	0.414	0.372	0.293
Delivery times, change previous quarter compared to same quarter of previous year	0.026	0.083	0.187	0.278	0.255	0.357	0.324	0.351	0.330
Delivery times, expected change next 3 months	-0.017	0.119	0.211	0.207	0.259	0.362	0.326	0.156	0.278
Demand, change past 3 months	-0.030	0.016	0.179	0.253	0.341	0.418	0.452	0.349	0.268
Demand, expected change next 3 months	-0.048	0.006	0.125	0.168	0.243	0.386	0.437	0.288	0.235
Number of employees, assessment	-0.063	0.072	-0.126	-0.196	-0.272	-0.427	-0.378	-0.406	-0.243
Number of employees, change past 3 months	-0.178	-0.125	0.086	0.195	0.195	0.395	0.446	0.427	0.439
Number of employees, expected change next 3 months	-0.098	-0.084	0.132	0.259	0.263	0.425	0.410	0.370	0.273
Profit situation, change past 3 months	-0.012	0.004	0.147	0.271	0.332	0.480	0.419	0.362	0.198
Purchase prices, expected change next 3 months	-0.032	0.072	0.257	0.269	0.397	0.454	0.452	0.302	0.404
Sales prices, expected change next 3 months	-0.060	0.032	0.173	0.255	0.309	0.477	0.387	0.291	0.274
Technical facilities, assessment	-0.133	0.071	0.162	0.143	-0.010	-0.068	0.020	-0.077	-0.194
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.066	-0.019	0.126	0.262	0.283	0.374	0.410	0.336	0.274
Volume of stock, assessment	-0.086	-0.124	-0.172	-0.173	-0.060	-0.146	-0.010	-0.003	0.156
Volume of stock, change previous quarter compared to same quarter of previous year	-0.114	0.024	0.079	0.194	0.218	0.309	0.502	0.406	0.471
Obstacle economic and legal circumstances	0.137	0.165	-0.001	-0.097	-0.193	-0.466	-0.477	-0.445	-0.282
Obstacle financial constraints	0.294	0.029	0.165	-0.056	0.334	-0.086	-0.119	0.112	-0.184
Obstacle insufficient demand	0.143	0.133	0.027	-0.112	-0.082	-0.223	-0.339	-0.377	-0.382
Obstacle insufficient technical equipment	-0.049	-0.169	0.027	0.031	-0.021	0.011	-0.013	0.268	0.147
Obstacle shortage of labour	-0.173	-0.265	0.076	0.133	0.204	0.219	0.267	0.466	0.451
No obstacles	-0.055	-0.036	-0.046	0.121	0.198	0.345	0.395	0.314	0.331

3.3 Industrial Production

Table 12: Cross-correlations with industrial production yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.192	-0.153	-0.004	0.246	0.476	0.620	0.578	0.450	0.278
Business situation, expected change next 6 months	0.017	0.059	0.307	0.585	0.788	0.576	0.314	0.095	-0.103
Competitive position, change past 3 months	0.064	0.102	0.233	0.393	0.515	0.486	0.265	0.175	0.023
Delivery times, change previous quarter compared to same quarter of previous year	-0.125	-0.068	0.136	0.441	0.672	0.682	0.522	0.400	0.157
Delivery times, expected change next 3 months	-0.058	0.020	0.237	0.503	0.647	0.485	0.326	0.142	-0.100
Demand, change past 3 months	-0.041	0.022	0.208	0.488	0.694	0.651	0.457	0.222	0.005
Demand, expected change next 3 months	-0.092	-0.039	0.226	0.591	0.783	0.561	0.298	0.090	-0.077
Number of employees, assessment	0.120	0.176	-0.054	-0.273	-0.578	-0.684	-0.539	-0.385	-0.252
Number of employees, change past 3 months	-0.154	-0.159	-0.037	0.166	0.434	0.635	0.600	0.518	0.374
Number of employees, expected change next 3 months	-0.170	-0.175	0.048	0.355	0.675	0.659	0.457	0.201	0.090
Profit situation, change past 3 months	0.004	-0.006	0.179	0.415	0.644	0.681	0.449	0.238	-0.022
Purchase prices, expected change next 3 months	0.067	0.120	0.360	0.572	0.735	0.629	0.451	0.304	0.096
Sales prices, expected change next 3 months	0.098	0.116	0.334	0.511	0.704	0.629	0.449	0.310	0.073
Technical facilities, assessment	0.113	0.081	0.204	-0.042	-0.178	-0.289	-0.377	-0.365	-0.389
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.047	-0.022	0.153	0.377	0.613	0.698	0.578	0.339	0.105
Volume of stock, assessment	0.018	0.077	-0.095	-0.353	-0.503	-0.353	-0.083	-0.022	0.135
Volume of stock, change previous quarter compared to same quarter of previous year	-0.060	-0.034	0.062	0.269	0.522	0.628	0.624	0.464	0.404
Obstacle economic and legal circumstances	-0.018	-0.046	-0.176	-0.209	-0.290	-0.344	-0.275	-0.286	-0.134
Obstacle financial constraints	0.148	0.126	0.189	0.014	-0.172	-0.405	-0.438	-0.326	-0.183
Obstacle insufficient demand	0.217	0.146	0.049	-0.113	-0.348	-0.532	-0.602	-0.482	-0.335
Obstacle insufficient technical equipment	-0.233	-0.136	-0.001	0.157	0.257	0.372	0.193	0.236	0.208
Obstacle shortage of labour	-0.222	-0.198	-0.048	0.192	0.428	0.508	0.487	0.471	0.455
No obstacles	-0.138	-0.082	0.028	0.135	0.295	0.453	0.499	0.454	0.226

Table 13: Cross-correlations with industrial production qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.099	-0.067	-0.112	-0.030	-0.032	0.149	0.239	0.255	0.293
Business situation, expected change next 6 months	0.128	0.008	-0.023	0.014	0.181	0.322	0.273	0.280	0.163
Competitive position, change past 3 months	0.067	0.069	-0.002	0.058	0.111	0.363	0.298	0.318	0.231
Delivery times, change previous quarter compared to same quarter of previous year	-0.009	-0.051	-0.068	0.027	0.053	0.189	0.149	0.261	0.280
Delivery times, expected change next 3 months	-0.011	-0.037	-0.053	-0.027	0.123	0.186	0.261	0.253	0.209
Demand, change past 3 months	0.025	0.006	-0.036	0.026	0.118	0.235	0.326	0.302	0.263
Demand, expected change next 3 months	0.054	-0.061	-0.141	-0.003	0.132	0.239	0.275	0.195	0.161
Number of employees, assessment	-0.147	0.162	0.037	0.083	0.038	-0.206	-0.221	-0.180	-0.311
Number of employees, change past 3 months	-0.034	-0.030	-0.092	-0.051	-0.072	0.127	0.156	0.194	0.282
Number of employees, expected change next 3 months	0.062	-0.128	-0.126	-0.123	0.012	0.213	0.346	0.218	0.212
Profit situation, change past 3 months	0.100	0.011	-0.017	0.006	0.016	0.306	0.263	0.316	0.263
Purchase prices, expected change next 3 months	0.110	0.032	0.044	0.086	0.152	0.329	0.239	0.271	0.189
Sales prices, expected change next 3 months	0.170	0.061	0.083	0.059	0.137	0.370	0.240	0.318	0.207
Technical facilities, assessment	0.144	-0.235	0.232	-0.013	-0.032	0.089	-0.156	0.134	-0.194
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.032	-0.019	0.003	0.021	0.026	0.210	0.287	0.286	0.287
Volume of stock, assessment	-0.163	-0.002	0.093	0.063	0.086	-0.162	-0.056	-0.098	-0.074
Volume of stock, change previous quarter compared to same quarter of previous year	0.008	0.005	0.015	-0.008	0.076	0.112	0.245	0.067	0.159
Obstacle economic and legal circumstances	-0.003	0.013	-0.043	-0.045	-0.037	-0.306	-0.155	-0.267	-0.213
Obstacle financial constraints	0.163	-0.112	0.110	0.110	0.144	0.099	-0.074	0.064	-0.074
Obstacle insufficient demand	0.146	0.099	0.009	0.091	-0.004	-0.036	-0.241	-0.279	-0.330
Obstacle insufficient technical equipment	-0.107	-0.137	-0.046	0.048	0.020	0.118	0.032	0.046	0.231
Obstacle shortage of labour	-0.011	-0.137	-0.152	-0.025	0.028	0.135	0.200	0.106	0.240
No obstacles	-0.092	-0.102	-0.004	-0.047	0.011	0.125	0.161	0.310	0.319

3.4 Export and Import of Goods

Table 14: Cross-correlations with nominal export of goods yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.308	-0.278	-0.154	0.113	0.377	0.463	0.380	0.243	0.145
Business situation, expected change next 6 months	-0.053	0.003	0.176	0.462	0.679	0.450	0.240	0.071	-0.006
Competitive position, change past 3 months	-0.124	-0.127	0.042	0.300	0.390	0.380	0.250	0.112	0.051
Delivery times, change previous quarter compared to same quarter of previous year	-0.095	-0.045	0.092	0.282	0.554	0.489	0.362	0.253	0.136
Delivery times, expected change next 3 months	-0.054	-0.013	0.088	0.257	0.352	0.286	0.254	-0.001	0.006
Demand, change past 3 months	-0.150	-0.092	0.090	0.363	0.581	0.477	0.282	0.074	0.003
Demand, expected change next 3 months	-0.111	-0.058	0.100	0.371	0.629	0.387	0.231	0.082	0.008
Number of employees, assessment	0.200	0.215	0.065	-0.215	-0.538	-0.493	-0.381	-0.228	-0.098
Number of employees, change past 3 months	-0.245	-0.263	-0.158	0.115	0.439	0.529	0.444	0.315	0.198
Number of employees, expected change next 3 months	-0.259	-0.267	-0.087	0.270	0.578	0.465	0.242	0.056	-0.030
Profit situation, change past 3 months	-0.163	-0.118	0.055	0.317	0.594	0.548	0.312	0.067	-0.033
Purchase prices, expected change next 3 months	0.034	0.086	0.243	0.428	0.632	0.515	0.423	0.277	0.247
Sales prices, expected change next 3 months	0.000	0.055	0.226	0.446	0.635	0.554	0.413	0.249	0.169
Technical facilities, assessment	-0.027	0.137	0.191	0.038	-0.104	-0.295	-0.427	-0.345	-0.379
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.149	-0.096	0.016	0.292	0.563	0.581	0.410	0.164	0.077
Volume of stock, assessment	-0.097	-0.016	-0.023	-0.182	-0.400	-0.280	-0.096	0.027	0.057
Volume of stock, change previous quarter compared to same quarter of previous year	-0.134	-0.110	-0.015	0.216	0.571	0.574	0.557	0.398	0.351
Obstacle economic and legal circumstances	0.254	0.167	0.051	-0.105	-0.194	-0.315	-0.250	-0.157	-0.073
Obstacle financial constraints	0.040	0.094	0.142	-0.068	-0.250	-0.401	-0.438	-0.245	-0.138
Obstacle insufficient demand	0.285	0.266	0.193	-0.004	-0.220	-0.386	-0.381	-0.226	-0.180
Obstacle insufficient technical equipment	-0.153	-0.124	-0.026	0.108	0.232	0.357	0.181	0.108	0.163
Obstacle shortage of labour	-0.249	-0.223	-0.099	0.015	0.341	0.391	0.322	0.362	0.275
No obstacles	-0.307	-0.233	-0.137	0.043	0.174	0.289	0.347	0.160	0.067

Table 15: Cross-correlations with nominal export of goods qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.153	-0.170	-0.229	-0.115	-0.078	0.073	0.198	0.165	0.234
Business situation, expected change next 6 months	0.063	-0.075	-0.103	-0.002	0.189	0.260	0.344	0.231	0.179
Competitive position, change past 3 months	0.015	-0.085	-0.166	-0.036	0.004	0.276	0.375	0.203	0.236
Delivery times, change previous quarter compared to same quarter of previous year	-0.088	-0.107	-0.056	0.032	0.053	0.134	0.092	0.157	0.278
Delivery times, expected change next 3 months	-0.042	-0.042	0.005	-0.018	0.072	0.131	0.242	0.049	0.268
Demand, change past 3 months	-0.062	-0.119	-0.123	-0.022	0.078	0.235	0.294	0.194	0.251
Demand, expected change next 3 months	-0.007	-0.086	-0.084	-0.057	0.124	0.198	0.251	0.146	0.218
Number of employees, assessment	0.000	0.155	0.180	0.119	0.018	-0.139	-0.198	-0.151	-0.163
Number of employees, change past 3 months	-0.070	-0.135	-0.201	-0.133	-0.112	0.069	0.193	0.144	0.184
Number of employees, expected change next 3 months	-0.017	-0.181	-0.232	-0.136	-0.039	0.179	0.329	0.154	0.083
Profit situation, change past 3 months	-0.074	-0.061	-0.127	-0.091	0.028	0.280	0.274	0.230	0.241
Purchase prices, expected change next 3 months	0.104	-0.067	-0.009	0.045	0.217	0.237	0.249	0.228	0.153
Sales prices, expected change next 3 months	0.070	-0.032	-0.064	0.012	0.189	0.317	0.307	0.238	0.185
Technical facilities, assessment	-0.090	-0.076	0.147	0.028	0.271	0.017	-0.061	0.014	-0.235
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.074	-0.074	-0.136	-0.046	0.050	0.142	0.294	0.213	0.231
Volume of stock, assessment	-0.123	-0.190	0.025	0.076	0.006	-0.149	-0.088	-0.065	-0.190
Volume of stock, change previous quarter compared to same quarter of previous year	-0.014	-0.098	-0.045	-0.169	0.033	0.091	0.227	0.088	0.129
Obstacle economic and legal circumstances	0.193	0.047	0.161	0.146	0.013	-0.214	-0.221	-0.151	-0.258
Obstacle financial constraints	0.054	-0.010	0.056	-0.012	0.179	0.123	-0.160	0.141	-0.084
Obstacle insufficient demand	0.187	0.146	0.144	0.149	0.127	-0.002	-0.189	-0.128	-0.261
Obstacle insufficient technical equipment	-0.257	-0.049	-0.106	0.053	-0.197	0.152	0.058	0.054	0.233
Obstacle shortage of labour	-0.108	-0.145	-0.138	-0.181	-0.074	0.129	0.002	0.242	0.085
No obstacles	-0.187	-0.148	-0.165	-0.157	-0.007	0.047	0.179	0.075	0.287

Table 16: Cross-correlations with nominal import of goods yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.438	-0.406	-0.220	0.073	0.412	0.511	0.499	0.391	0.249
Business situation, expected change next 6 months	-0.204	-0.085	0.193	0.523	0.735	0.559	0.389	0.177	0.034
Competitive position, change past 3 months	-0.213	-0.161	0.054	0.314	0.452	0.426	0.387	0.218	0.122
Delivery times, change previous quarter compared to same quarter of previous year	-0.239	-0.193	0.037	0.277	0.597	0.563	0.509	0.374	0.208
Delivery times, expected change next 3 months	-0.167	-0.075	0.134	0.335	0.521	0.463	0.365	0.154	-0.018
Demand, change past 3 months	-0.281	-0.189	0.076	0.389	0.654	0.576	0.427	0.228	0.064
Demand, expected change next 3 months	-0.272	-0.155	0.165	0.450	0.705	0.516	0.363	0.208	0.041
Number of employees, assessment	0.343	0.306	0.133	-0.213	-0.557	-0.508	-0.500	-0.328	-0.168
Number of employees, change past 3 months	-0.343	-0.374	-0.228	0.090	0.436	0.534	0.551	0.433	0.293
Number of employees, expected change next 3 months	-0.388	-0.352	-0.074	0.312	0.590	0.498	0.324	0.151	0.055
Profit situation, change past 3 months	-0.284	-0.208	0.031	0.354	0.676	0.601	0.451	0.194	0.030
Purchase prices, expected change next 3 months	-0.130	0.002	0.225	0.514	0.738	0.658	0.597	0.391	0.275
Sales prices, expected change next 3 months	-0.164	-0.060	0.169	0.482	0.718	0.665	0.593	0.353	0.207
Technical facilities, assessment	0.053	0.243	0.215	0.226	0.015	-0.142	-0.314	-0.402	-0.469
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.298	-0.230	-0.040	0.297	0.631	0.648	0.536	0.318	0.137
Volume of stock, assessment	0.001	0.058	-0.073	-0.236	-0.494	-0.324	-0.254	-0.058	0.127
Volume of stock, change previous quarter compared to same quarter of previous year	-0.221	-0.215	-0.068	0.182	0.491	0.576	0.558	0.521	0.459
Obstacle economic and legal circumstances	0.296	0.191	0.073	-0.111	-0.274	-0.361	-0.394	-0.267	-0.166
Obstacle financial constraints	0.120	0.271	0.162	-0.005	-0.281	-0.400	-0.355	-0.269	-0.125
Obstacle insufficient demand	0.385	0.399	0.298	0.058	-0.227	-0.431	-0.456	-0.392	-0.286
Obstacle insufficient technical equipment	-0.208	-0.223	-0.122	0.004	0.178	0.153	0.222	0.201	0.284
Obstacle shortage of labour	-0.341	-0.318	-0.163	0.020	0.262	0.328	0.404	0.385	0.434
No obstacles	-0.363	-0.320	-0.200	-0.002	0.233	0.402	0.444	0.318	0.141

Table 17: Cross-correlations with nominal import of goods qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.173	-0.272	-0.328	-0.290	-0.104	0.103	0.239	0.342	0.318
Business situation, expected change next 6 months	-0.027	-0.193	-0.233	-0.034	0.254	0.386	0.471	0.385	0.304
Competitive position, change past 3 months	-0.040	-0.200	-0.195	-0.095	-0.095	0.327	0.482	0.325	0.273
Delivery times, change previous quarter compared to same quarter of previous year	-0.067	-0.237	-0.155	-0.108	0.059	0.131	0.196	0.375	0.369
Delivery times, expected change next 3 months	-0.071	-0.141	-0.148	-0.068	0.145	0.311	0.262	0.364	0.364
Demand, change past 3 months	-0.092	-0.226	-0.239	-0.120	0.122	0.326	0.398	0.410	0.350
Demand, expected change next 3 months	-0.086	-0.283	-0.194	-0.105	0.183	0.369	0.320	0.349	0.313
Number of employees, assessment	0.047	0.231	0.308	0.244	-0.022	-0.106	-0.294	-0.297	-0.213
Number of employees, change past 3 months	-0.038	-0.216	-0.314	-0.248	-0.140	0.040	0.264	0.254	0.245
Number of employees, expected change next 3 months	-0.074	-0.307	-0.347	-0.222	-0.016	0.313	0.394	0.220	0.147
Profit situation, change past 3 months	-0.061	-0.172	-0.250	-0.217	0.132	0.318	0.411	0.412	0.304
Purchase prices, expected change next 3 months	0.003	-0.145	-0.176	0.024	0.311	0.302	0.434	0.381	0.327
Sales prices, expected change next 3 months	0.017	-0.125	-0.224	-0.046	0.269	0.362	0.477	0.396	0.327
Technical facilities, assessment	-0.239	0.109	-0.001	0.201	0.257	0.086	0.189	0.012	-0.267
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.097	-0.162	-0.274	-0.179	0.053	0.221	0.379	0.420	0.315
Volume of stock, assessment	-0.206	0.004	0.058	0.187	-0.093	-0.185	-0.140	-0.296	-0.132
Volume of stock, change previous quarter compared to same quarter of previous year	-0.040	-0.079	-0.200	-0.179	-0.043	0.162	0.155	0.121	0.304
Obstacle economic and legal circumstances	0.200	0.115	0.201	0.225	-0.072	-0.217	-0.307	-0.275	-0.310
Obstacle financial constraints	-0.127	0.116	0.154	0.145	0.257	-0.018	0.004	-0.026	-0.002
Obstacle insufficient demand	0.178	0.170	0.295	0.279	0.230	-0.033	-0.177	-0.301	-0.364
Obstacle insufficient technical equipment	-0.106	-0.208	-0.064	-0.092	-0.125	-0.090	0.136	0.096	0.006
Obstacle shortage of labour	-0.149	-0.290	-0.157	-0.211	-0.100	0.040	0.171	0.081	0.147
No obstacles	-0.194	-0.162	-0.288	-0.260	-0.071	0.104	0.162	0.312	0.431

3.5 Retail Trade Turnover

Table 18: Cross-correlations with nominal retail trade turnover yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	0.017	-0.003	0.042	0.098	0.230	0.432	0.467	0.481	0.448
Business situation, expected change next 6 months	-0.054	-0.055	0.074	0.191	0.416	0.497	0.381	0.231	0.113
Competitive position, change past 3 months	0.051	0.014	0.144	0.256	0.374	0.471	0.409	0.402	0.293
Delivery times, change previous quarter compared to same quarter of previous year	-0.045	-0.104	-0.119	-0.177	0.014	0.225	0.298	0.338	0.238
Delivery times, expected change next 3 months	-0.078	-0.099	-0.124	0.001	0.179	0.407	0.425	0.359	0.273
Demand, change past 3 months	-0.017	-0.041	0.002	0.119	0.294	0.471	0.446	0.346	0.254
Demand, expected change next 3 months	-0.089	-0.051	-0.004	0.159	0.364	0.474	0.442	0.321	0.192
Number of employees, assessment	0.003	0.134	0.059	-0.004	-0.134	-0.243	-0.321	-0.315	-0.379
Number of employees, change past 3 months	0.112	0.022	-0.048	-0.012	0.117	0.256	0.289	0.351	0.343
Number of employees, expected change next 3 months	-0.029	-0.089	-0.025	0.111	0.290	0.406	0.381	0.342	0.304
Profit situation, change past 3 months	-0.010	-0.101	0.005	0.101	0.262	0.408	0.404	0.344	0.237
Purchase prices, expected change next 3 months	0.167	0.110	0.100	0.085	0.276	0.312	0.209	0.109	0.001
Sales prices, expected change next 3 months	0.119	0.048	0.151	0.183	0.364	0.388	0.261	0.175	0.036
Technical facilities, assessment	0.079	0.056	0.081	-0.022	0.060	0.130	-0.046	-0.282	-0.361
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.014	-0.112	-0.077	0.014	0.156	0.408	0.430	0.351	0.298
Volume of stock, assessment	0.042	0.293	0.275	0.290	0.173	-0.151	-0.195	-0.186	-0.103
Volume of stock, change previous quarter compared to same quarter of previous year	0.061	0.007	-0.076	-0.005	0.082	0.072	0.125	0.090	0.125
Obstacle economic and legal circumstances	-0.212	-0.212	-0.348	-0.498	-0.501	-0.500	-0.468	-0.407	-0.304
Obstacle financial constraints	0.173	0.215	0.314	0.351	0.225	0.120	0.181	0.004	-0.024
Obstacle insufficient demand	0.028	0.049	0.063	0.018	-0.117	-0.370	-0.492	-0.517	-0.514
Obstacle insufficient technical equipment	0.028	0.009	-0.017	-0.077	-0.004	0.116	0.237	0.316	0.238
Obstacle shortage of labour	0.238	0.221	0.244	0.254	0.315	0.219	0.350	0.365	0.270
No obstacles	-0.003	-0.062	-0.013	0.086	0.155	0.363	0.483	0.507	0.488

Table 19: Cross-correlations with nominal retail trade turnover qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.006	0.017	0.005	-0.007	-0.078	0.118	0.169	0.236	0.317
Business situation, expected change next 6 months	-0.030	0.008	-0.034	-0.111	-0.039	0.302	0.283	0.240	0.161
Competitive position, change past 3 months	0.000	0.016	0.008	0.038	0.009	0.246	0.198	0.242	0.275
Delivery times, change previous quarter compared to same quarter of previous year	-0.010	0.035	-0.102	-0.103	-0.151	-0.026	0.004	0.194	0.245
Delivery times, expected change next 3 months	-0.025	0.074	-0.141	-0.143	-0.078	0.099	0.193	0.217	0.331
Demand, change past 3 months	-0.020	0.038	-0.062	-0.062	-0.069	0.154	0.258	0.238	0.283
Demand, expected change next 3 months	-0.096	0.070	-0.106	-0.125	-0.016	0.219	0.294	0.214	0.219
Number of employees, assessment	-0.132	0.038	-0.006	0.134	0.112	-0.107	-0.114	-0.096	-0.155
Number of employees, change past 3 months	0.063	0.131	0.018	-0.018	-0.118	0.023	0.090	0.153	0.208
Number of employees, expected change next 3 months	0.001	-0.013	0.033	-0.097	-0.079	0.158	0.211	0.199	0.212
Profit situation, change past 3 months	0.025	-0.013	-0.065	-0.035	-0.099	0.170	0.204	0.222	0.208
Purchase prices, expected change next 3 months	0.159	0.147	0.028	-0.074	0.018	0.204	0.098	0.188	0.135
Sales prices, expected change next 3 months	0.137	0.097	0.008	-0.066	0.007	0.309	0.146	0.208	0.122
Technical facilities, assessment	-0.044	-0.057	0.182	-0.026	-0.041	0.044	0.138	0.175	-0.095
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.016	-0.018	-0.058	-0.043	-0.172	0.076	0.186	0.213	0.304
Volume of stock, assessment	0.016	-0.028	0.091	0.146	0.392	-0.001	-0.023	-0.088	-0.185
Volume of stock, change previous quarter compared to same quarter of previous year	0.059	0.172	-0.006	-0.080	-0.069	-0.034	0.108	0.019	0.014
Obstacle economic and legal circumstances	-0.078	-0.117	-0.070	-0.135	-0.159	-0.336	-0.318	-0.215	-0.168
Obstacle financial constraints	0.197	-0.082	0.129	0.159	0.242	0.111	0.155	0.052	-0.025
Obstacle insufficient demand	0.021	0.018	-0.023	0.057	0.119	0.029	-0.146	-0.245	-0.358
Obstacle insufficient technical equipment	-0.191	-0.046	0.019	0.184	-0.144	-0.196	0.001	0.185	0.220
Obstacle shortage of labour	0.105	0.065	0.163	0.165	0.136	0.048	0.078	0.188	0.124
No obstacles	0.099	0.054	-0.128	-0.060	-0.020	0.101	0.155	0.145	0.344

Table 20: Cross-correlations with real retail trade turnover yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	0.342	0.296	0.278	0.261	0.291	0.415	0.393	0.357	0.302
Business situation, expected change next 6 months	0.056	-0.040	-0.016	-0.006	0.143	0.188	0.085	-0.043	-0.116
Competitive position, change past 3 months	0.323	0.229	0.266	0.239	0.221	0.261	0.194	0.178	0.089
Delivery times, change previous quarter compared to same quarter of previous year	0.098	-0.002	-0.061	-0.184	-0.046	0.083	0.086	0.080	-0.020
Delivery times, expected change next 3 months	0.114	0.042	-0.039	-0.007	0.100	0.271	0.279	0.192	0.141
Demand, change past 3 months	0.222	0.132	0.082	0.094	0.176	0.278	0.239	0.117	0.042
Demand, expected change next 3 months	0.035	0.005	-0.015	0.042	0.196	0.259	0.225	0.119	0.029
Number of employees, assessment	-0.260	-0.091	-0.124	-0.111	-0.154	-0.197	-0.222	-0.151	-0.195
Number of employees, change past 3 months	0.354	0.268	0.183	0.160	0.202	0.274	0.261	0.267	0.229
Number of employees, expected change next 3 months	0.278	0.188	0.200	0.245	0.312	0.378	0.315	0.235	0.168
Profit situation, change past 3 months	0.223	0.089	0.104	0.097	0.153	0.230	0.197	0.121	0.031
Purchase prices, expected change next 3 months	0.142	0.019	-0.039	-0.117	0.033	0.079	-0.008	-0.104	-0.176
Sales prices, expected change next 3 months	0.111	-0.038	-0.022	-0.084	0.027	0.063	-0.032	-0.096	-0.183
Technical facilities, assessment	0.058	-0.022	0.003	-0.072	0.091	0.253	0.166	-0.012	-0.102
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.184	0.032	-0.012	-0.009	0.031	0.200	0.199	0.088	0.057
Volume of stock, assessment	0.072	0.316	0.325	0.419	0.361	0.059	-0.009	-0.046	-0.048
Volume of stock, change previous quarter compared to same quarter of previous year	0.080	0.037	-0.047	-0.036	0.016	-0.052	-0.024	-0.115	-0.111
Obstacle economic and legal circumstances	-0.496	-0.456	-0.515	-0.560	-0.496	-0.466	-0.426	-0.373	-0.283
Obstacle financial constraints	0.320	0.344	0.376	0.387	0.249	0.167	0.237	0.122	0.085
Obstacle insufficient demand	-0.324	-0.287	-0.226	-0.194	-0.209	-0.354	-0.400	-0.358	-0.326
Obstacle insufficient technical equipment	0.121	0.063	0.020	-0.095	-0.092	-0.069	0.015	0.045	0.004
Obstacle shortage of labour	0.417	0.396	0.423	0.374	0.382	0.257	0.340	0.336	0.223
No obstacles	0.394	0.310	0.287	0.288	0.282	0.393	0.454	0.404	0.354

Table 21: Cross-correlations with real retail trade turnover qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	0.149	0.184	0.166	0.169	0.022	0.173	0.175	0.198	0.264
Business situation, expected change next 6 months	0.038	0.065	0.010	-0.086	-0.146	0.145	0.111	0.095	0.022
Competitive position, change past 3 months	0.126	0.150	0.177	0.181	0.007	0.184	0.088	0.123	0.178
Delivery times, change previous quarter compared to same quarter of previous year	0.059	0.093	-0.044	-0.052	-0.140	-0.040	-0.066	0.089	0.120
Delivery times, expected change next 3 months	0.080	0.178	-0.040	-0.039	-0.045	0.066	0.119	0.133	0.285
Demand, change past 3 months	0.110	0.163	0.052	0.043	-0.057	0.085	0.167	0.124	0.184
Demand, expected change next 3 months	-0.043	0.124	-0.027	-0.071	-0.071	0.117	0.177	0.117	0.121
Number of employees, assessment	-0.244	-0.063	-0.150	-0.017	0.067	-0.108	-0.118	-0.041	-0.098
Number of employees, change past 3 months	0.153	0.226	0.150	0.148	-0.024	0.079	0.095	0.130	0.185
Number of employees, expected change next 3 months	0.142	0.122	0.215	0.086	-0.015	0.169	0.202	0.157	0.202
Profit situation, change past 3 months	0.144	0.111	0.056	0.081	-0.081	0.118	0.106	0.110	0.109
Purchase prices, expected change next 3 months	0.136	0.124	0.006	-0.089	-0.113	0.070	-0.045	0.073	0.042
Sales prices, expected change next 3 months	0.130	0.084	-0.002	-0.096	-0.155	0.123	-0.054	0.046	-0.001
Technical facilities, assessment	0.020	-0.067	0.193	-0.057	-0.065	0.047	0.171	0.290	0.065
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.131	0.081	0.016	0.047	-0.158	0.012	0.086	0.071	0.176
Volume of stock, assessment	0.087	0.023	0.079	0.092	0.442	0.108	0.129	0.039	-0.135
Volume of stock, change previous quarter compared to same quarter of previous year	0.018	0.149	0.006	-0.056	-0.083	-0.092	0.038	-0.053	-0.088
Obstacle economic and legal circumstances	-0.225	-0.285	-0.259	-0.252	-0.203	-0.358	-0.296	-0.214	-0.141
Obstacle financial constraints	0.280	0.043	0.221	0.213	0.267	0.124	0.191	0.129	0.016
Obstacle insufficient demand	-0.161	-0.146	-0.189	-0.133	-0.040	-0.052	-0.159	-0.181	-0.308
Obstacle insufficient technical equipment	-0.125	-0.050	0.045	0.203	-0.137	-0.237	-0.066	0.031	0.080
Obstacle shortage of labour	0.169	0.139	0.275	0.246	0.179	0.113	0.092	0.175	0.128
No obstacles	0.284	0.283	0.105	0.121	0.120	0.187	0.209	0.153	0.296

3.6 Employment

Table 22: Cross-correlations with wholesale trade employment (FT) yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	0.259	0.310	0.376	0.459	0.470	0.443	0.354	0.252	0.135
Business situation, expected change next 6 months	-0.049	0.047	0.136	0.175	0.127	-0.025	-0.149	-0.247	-0.329
Competitive position, change past 3 months	0.338	0.316	0.331	0.311	0.175	0.114	0.005	-0.096	-0.156
Delivery times, change previous quarter compared to same quarter of previous year	-0.094	-0.042	0.060	0.189	0.236	0.175	0.058	-0.047	-0.172
Delivery times, expected change next 3 months	0.018	0.091	0.200	0.325	0.345	0.246	0.160	0.001	-0.165
Demand, change past 3 months	0.164	0.204	0.279	0.323	0.291	0.177	0.032	-0.090	-0.205
Demand, expected change next 3 months	-0.126	0.041	0.188	0.304	0.311	0.150	0.034	-0.081	-0.187
Number of employees, assessment	-0.135	-0.178	-0.275	-0.365	-0.395	-0.319	-0.252	-0.087	0.046
Number of employees, change past 3 months	0.170	0.204	0.287	0.413	0.438	0.460	0.391	0.287	0.186
Number of employees, expected change next 3 months	0.233	0.301	0.406	0.503	0.491	0.385	0.252	0.103	-0.022
Profit situation, change past 3 months	0.173	0.215	0.281	0.331	0.277	0.199	0.052	-0.085	-0.199
Purchase prices, expected change next 3 months	-0.182	-0.147	-0.079	0.017	0.089	0.038	0.028	-0.048	-0.178
Sales prices, expected change next 3 months	-0.120	-0.121	-0.090	-0.050	-0.058	-0.084	-0.126	-0.172	-0.263
Technical facilities, assessment	0.163	0.134	0.012	-0.009	-0.017	0.011	0.129	0.125	0.121
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.042	0.064	0.115	0.218	0.235	0.182	0.080	-0.064	-0.190
Volume of stock, assessment	0.309	0.184	0.037	-0.075	-0.072	0.011	0.066	0.105	0.185
Volume of stock, change previous quarter compared to same quarter of previous year	-0.250	-0.159	-0.046	0.092	0.181	0.152	0.107	-0.013	-0.074
Obstacle economic and legal circumstances	-0.505	-0.541	-0.522	-0.482	-0.343	-0.354	-0.288	-0.191	-0.161
Obstacle financial constraints	0.587	0.527	0.442	0.182	0.037	-0.131	-0.136	-0.083	-0.041
Obstacle insufficient demand	-0.317	-0.293	-0.328	-0.386	-0.394	-0.387	-0.313	-0.197	-0.104
Obstacle insufficient technical equipment	-0.036	-0.080	-0.003	0.053	-0.065	-0.055	-0.147	-0.190	-0.060
Obstacle shortage of labour	0.203	0.234	0.344	0.375	0.461	0.431	0.368	0.322	0.254
No obstacles	0.470	0.464	0.430	0.458	0.423	0.446	0.390	0.227	0.103

Table 23: Cross-correlations with wholesale trade employment (FT) qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	0.131	0.127	0.118	0.233	0.243	0.265	0.258	0.217	0.189
Business situation, expected change next 6 months	-0.063	-0.095	-0.015	0.073	0.150	0.069	-0.023	-0.039	-0.103
Competitive position, change past 3 months	0.204	0.121	0.180	0.272	0.154	0.158	0.116	-0.033	0.060
Delivery times, change previous quarter compared to same quarter of previous year	-0.023	-0.067	-0.086	-0.026	0.105	0.113	0.109	0.040	0.018
Delivery times, expected change next 3 months	0.041	-0.045	0.007	0.043	0.201	0.157	0.209	0.110	0.068
Demand, change past 3 months	0.121	0.048	0.082	0.139	0.206	0.190	0.113	0.042	0.006
Demand, expected change next 3 months	-0.124	-0.153	-0.048	0.046	0.250	0.137	0.095	0.054	-0.001
Number of employees, assessment	-0.098	-0.028	-0.039	-0.157	-0.185	-0.246	-0.152	-0.174	-0.041
Number of employees, change past 3 months	0.099	0.059	0.066	0.182	0.167	0.246	0.295	0.177	0.204
Number of employees, expected change next 3 months	0.135	0.079	0.096	0.235	0.271	0.321	0.223	0.166	0.083
Profit situation, change past 3 months	0.052	0.077	0.086	0.189	0.147	0.206	0.136	0.036	0.012
Purchase prices, expected change next 3 months	-0.013	-0.147	-0.137	-0.105	0.060	-0.035	0.004	0.054	-0.003
Sales prices, expected change next 3 months	-0.037	-0.082	-0.110	-0.033	-0.042	-0.039	-0.091	-0.054	-0.056
Technical facilities, assessment	0.129	0.242	-0.009	-0.003	0.072	-0.069	0.026	0.029	0.133
Volume of sales of goods, change previous quarter compared to same quarter of previous year	0.068	0.023	-0.035	0.058	0.109	0.119	0.139	0.059	0.001
Volume of stock, assessment	0.212	0.245	0.184	0.071	-0.077	-0.034	0.046	0.074	0.005
Volume of stock, change previous quarter compared to same quarter of previous year	-0.131	-0.195	-0.139	-0.092	0.071	0.070	0.096	0.032	-0.015
Obstacle economic and legal circumstances	-0.126	-0.263	-0.328	-0.441	-0.211	-0.230	-0.241	-0.136	-0.246
Obstacle financial constraints	0.318	0.297	0.440	0.288	0.183	0.107	-0.103	0.039	-0.153
Obstacle insufficient demand	-0.229	-0.189	-0.146	-0.180	-0.168	-0.266	-0.257	-0.166	-0.139
Obstacle insufficient technical equipment	0.057	-0.095	-0.067	0.039	-0.035	0.067	0.014	-0.278	-0.008
Obstacle shortage of labour	0.133	0.032	0.203	0.109	0.200	0.298	0.195	0.269	0.137
No obstacles	0.211	0.305	0.267	0.299	0.204	0.217	0.329	0.209	0.255

3.7 Producer Price Index

Table 24: Cross-correlations with producer price index yoy

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.402	-0.275	-0.044	0.233	0.503	0.600	0.576	0.495	0.405
Business situation, expected change next 6 months	-0.225	0.007	0.317	0.591	0.707	0.550	0.380	0.224	0.103
Competitive position, change past 3 months	-0.275	-0.082	0.141	0.378	0.510	0.473	0.424	0.334	0.230
Delivery times, change previous quarter compared to same quarter of previous year	-0.220	-0.127	0.036	0.258	0.479	0.490	0.446	0.330	0.214
Delivery times, expected change next 3 months	-0.186	-0.039	0.169	0.329	0.482	0.429	0.334	0.177	0.069
Demand, change past 3 months	-0.277	-0.086	0.197	0.460	0.626	0.559	0.409	0.259	0.159
Demand, expected change next 3 months	-0.245	-0.048	0.253	0.522	0.684	0.566	0.450	0.294	0.160
Number of employees, assessment	0.317	0.193	-0.026	-0.270	-0.511	-0.484	-0.435	-0.382	-0.252
Number of employees, change past 3 months	-0.294	-0.203	-0.039	0.228	0.504	0.565	0.532	0.468	0.353
Number of employees, expected change next 3 months	-0.298	-0.134	0.118	0.365	0.530	0.431	0.327	0.277	0.223
Profit situation, change past 3 months	-0.312	-0.112	0.162	0.436	0.632	0.557	0.396	0.243	0.132
Purchase prices, expected change next 3 months	-0.001	0.206	0.420	0.588	0.708	0.602	0.476	0.351	0.227
Sales prices, expected change next 3 months	-0.146	0.117	0.388	0.622	0.753	0.637	0.493	0.347	0.203
Technical facilities, assessment	0.223	0.372	0.373	0.222	-0.008	-0.256	-0.475	-0.483	-0.463
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.342	-0.177	0.078	0.351	0.602	0.619	0.491	0.354	0.233
Volume of stock, assessment	0.225	0.152	-0.007	-0.239	-0.442	-0.301	-0.166	0.027	0.203
Volume of stock, change previous quarter compared to same quarter of previous year	-0.145	-0.141	0.012	0.214	0.454	0.553	0.553	0.513	0.424
Obstacle economic and legal circumstances	0.244	0.013	-0.197	-0.432	-0.572	-0.585	-0.536	-0.407	-0.273
Obstacle financial constraints	0.200	0.235	0.187	0.075	-0.137	-0.222	-0.273	-0.257	-0.221
Obstacle insufficient demand	0.407	0.366	0.207	-0.021	-0.308	-0.474	-0.501	-0.465	-0.407
Obstacle insufficient technical equipment	-0.331	-0.259	-0.245	-0.073	0.182	0.302	0.364	0.387	0.357
Obstacle shortage of labour	-0.123	-0.023	0.067	0.248	0.425	0.499	0.570	0.574	0.489
No obstacles	-0.361	-0.262	-0.064	0.131	0.323	0.427	0.431	0.337	0.250

Table 25: Cross-correlations with producer price index qoq

	-4	-3	-2	-1	0	1	2	3	4
Business situation, assessment	-0.275	-0.309	-0.294	-0.216	0.070	0.284	0.370	0.393	0.432
Business situation, expected change next 6 months	-0.216	-0.290	-0.199	0.089	0.418	0.515	0.461	0.334	0.274
Competitive position, change past 3 months	-0.249	-0.223	-0.220	-0.055	0.280	0.382	0.430	0.357	0.324
Delivery times, change previous quarter compared to same quarter of previous year	-0.147	-0.197	-0.182	-0.065	0.090	0.182	0.278	0.335	0.344
Delivery times, expected change next 3 months	-0.160	-0.190	-0.124	-0.056	0.245	0.346	0.283	0.320	0.296
Demand, change past 3 months	-0.257	-0.277	-0.208	-0.015	0.265	0.450	0.425	0.346	0.324
Demand, expected change next 3 months	-0.211	-0.296	-0.195	0.020	0.332	0.461	0.419	0.340	0.358
Number of employees, assessment	0.188	0.278	0.259	0.136	-0.161	-0.250	-0.265	-0.330	-0.265
Number of employees, change past 3 months	-0.148	-0.169	-0.275	-0.201	0.100	0.232	0.308	0.352	0.346
Number of employees, expected change next 3 months	-0.230	-0.275	-0.235	-0.075	0.235	0.352	0.303	0.224	0.192
Profit situation, change past 3 months	-0.242	-0.271	-0.262	-0.077	0.306	0.437	0.392	0.349	0.301
Purchase prices, expected change next 3 months	-0.082	-0.075	-0.007	0.164	0.478	0.482	0.368	0.376	0.301
Sales prices, expected change next 3 months	-0.192	-0.173	-0.135	0.112	0.520	0.545	0.439	0.393	0.306
Technical facilities, assessment	-0.167	0.115	0.323	0.302	0.236	0.171	0.034	-0.178	-0.504
Volume of sales of goods, change previous quarter compared to same quarter of previous year	-0.270	-0.277	-0.245	-0.140	0.181	0.380	0.397	0.398	0.343
Volume of stock, assessment	0.031	0.140	0.274	0.188	-0.169	-0.229	-0.271	-0.239	-0.043
Volume of stock, change previous quarter compared to same quarter of previous year	0.040	-0.101	-0.169	-0.143	0.051	0.254	0.203	0.256	0.395
Obstacle economic and legal circumstances	0.261	0.145	0.209	0.048	-0.375	-0.439	-0.466	-0.395	-0.423
Obstacle financial constraints	0.052	0.121	0.121	0.251	0.148	0.042	-0.007	-0.035	-0.059
Obstacle insufficient demand	0.227	0.264	0.291	0.323	0.118	-0.143	-0.276	-0.375	-0.382
Obstacle insufficient technical equipment	-0.359	-0.074	-0.177	-0.265	-0.179	-0.067	0.185	0.308	0.259
Obstacle shortage of labour	-0.141	-0.050	-0.126	0.011	0.133	0.161	0.253	0.355	0.376
No obstacles	-0.199	-0.303	-0.283	-0.202	0.065	0.228	0.247	0.302	0.388

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