



8th INTERNATIONAL CONGRESS OF SPRING INDUSTRY



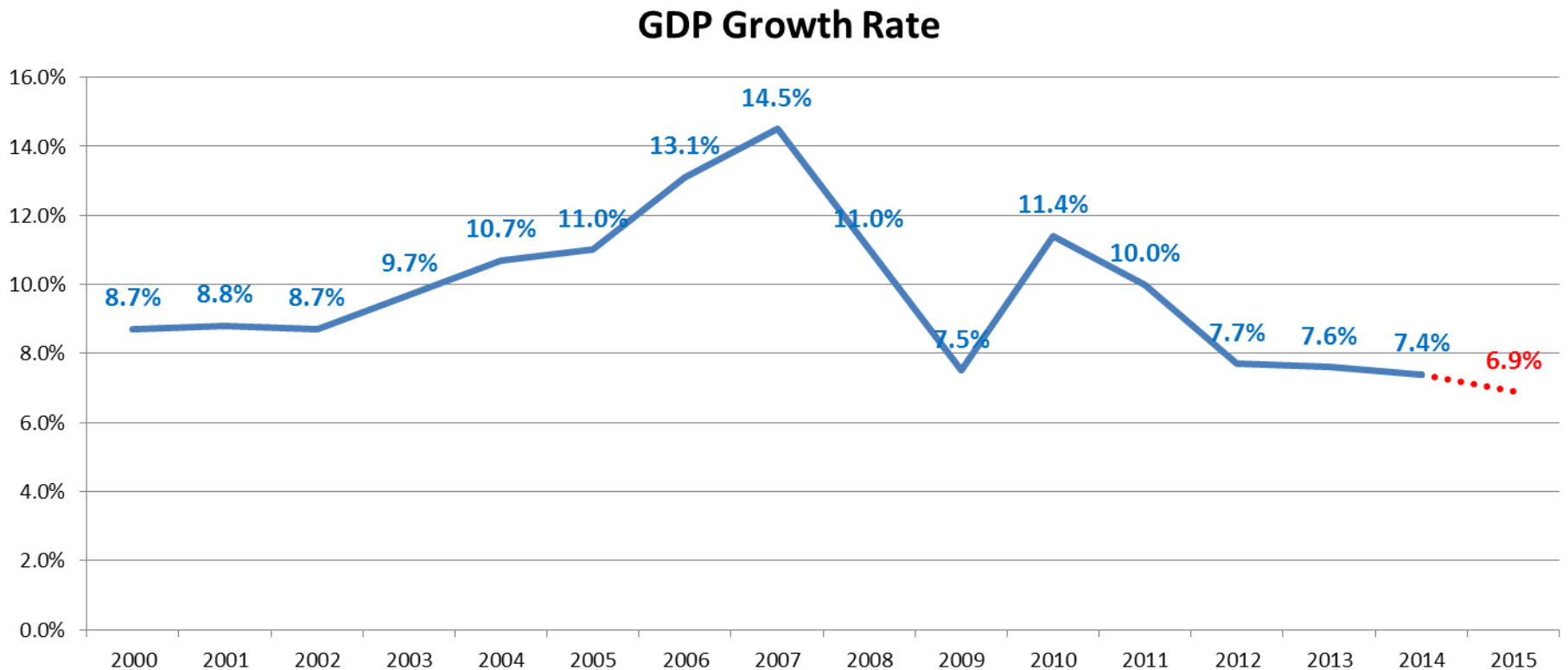
The Economic Situation Of The Spring Industry In China

China Spring Specialty Association
23 September 2015

Essential Data of CSSA in 2015

1. China Spring Specialty Association (CSSA) Established in 1989
2. Belong to the China Mechanical General Parts Industry Association.
3. Current Chairman: Mr. PAN Hong, Secretary-General: Mr. ZHANG Jun
4. Technology & Standardization Committee Director: Mr. ZHANG Jun
Collaboration Committee Director: Mr. LIN Bin Huei (Kenny LIN)
5. Registered Members: 255 Spring Manufacturers;
Total Members Sales: RMB 22 billion (excluding Leaf Springs) in 2014
Total employees about 23,000.

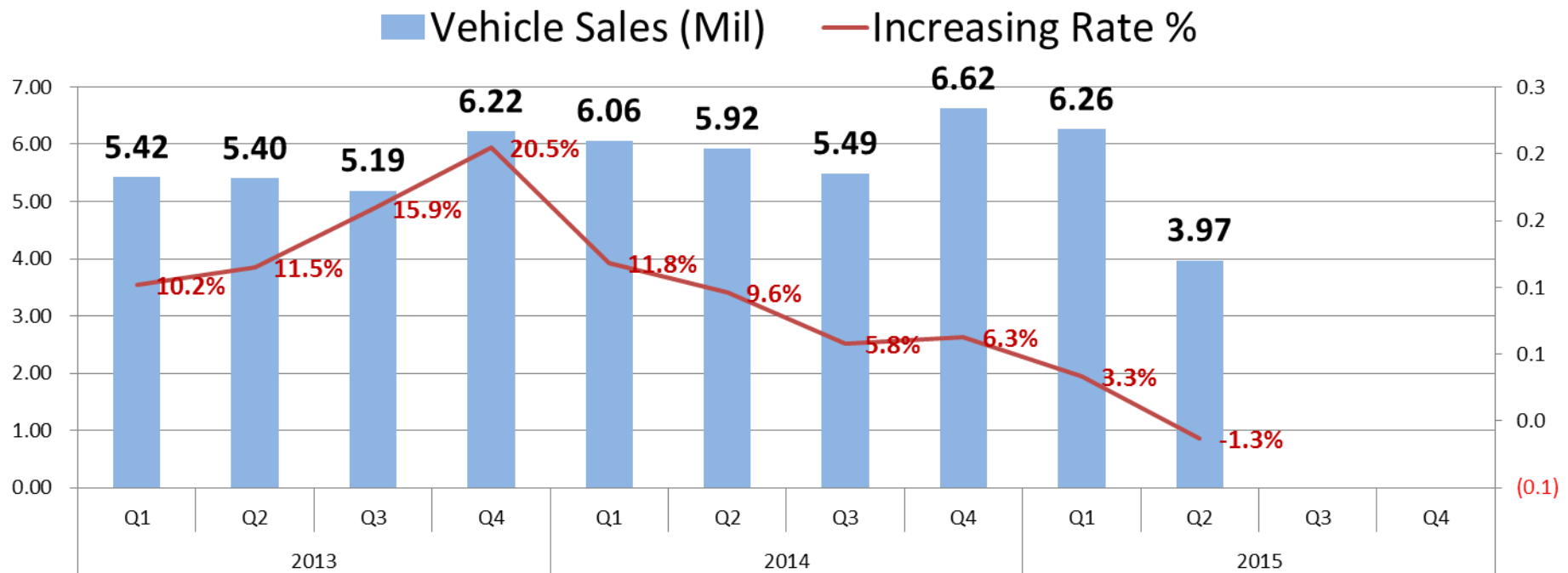
Environment Situation To Spring Industry In China



Macro-economic tendency is still slowly going down, and economic structure need to change for further development.

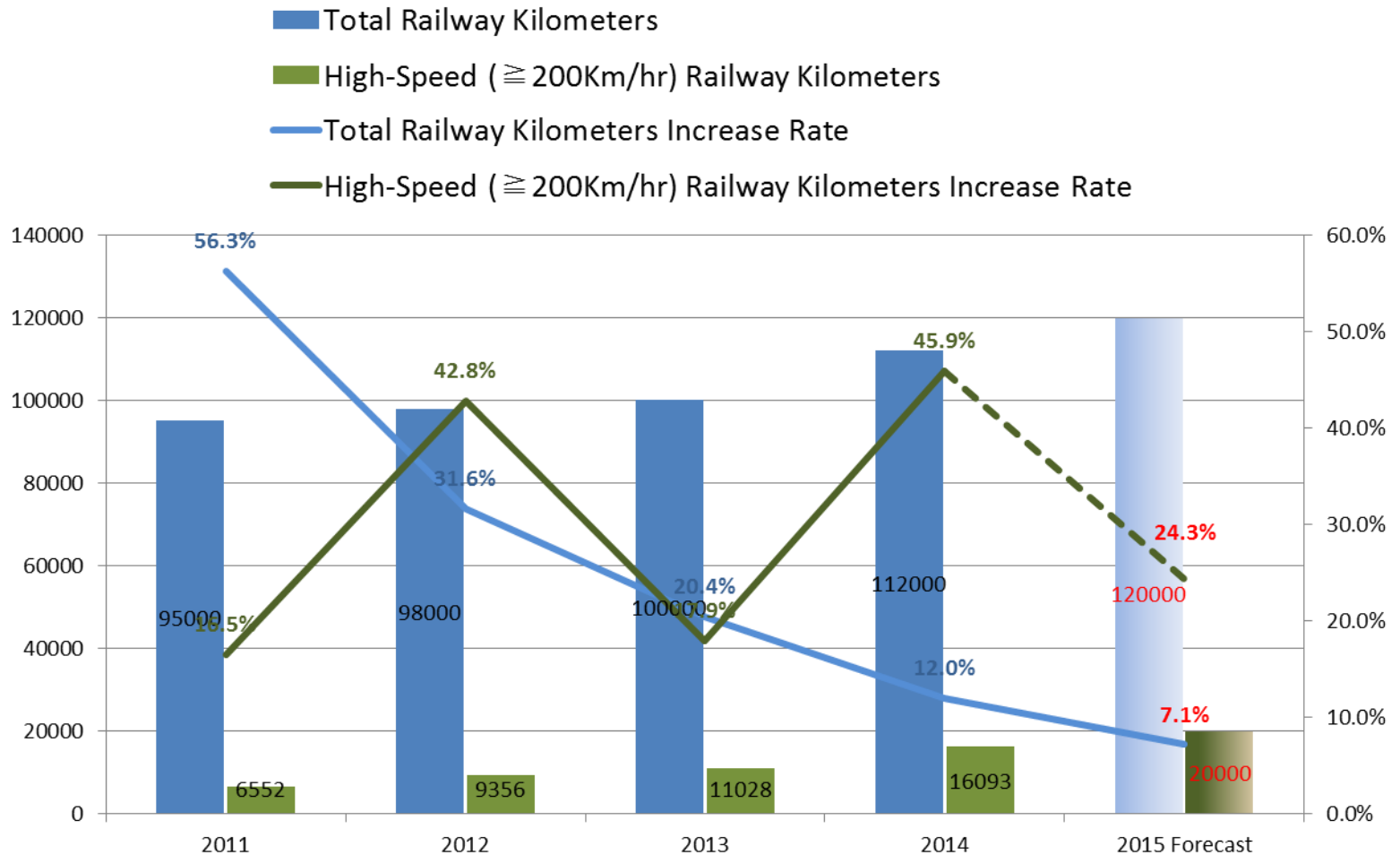
Environment Situation To Spring Industry In China

Automobile Industry Situation in China

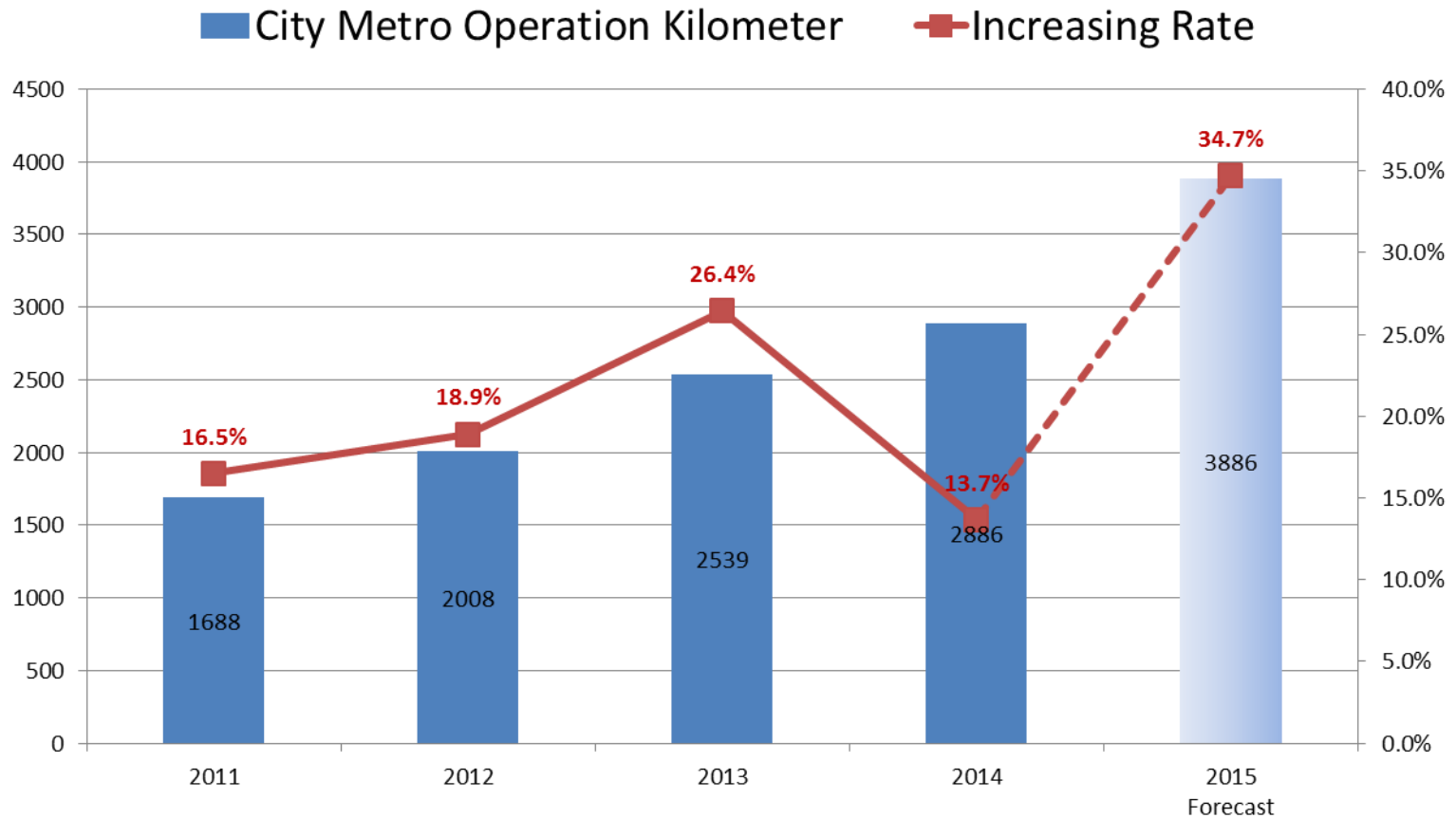


Vehicle volume is still slowly increasing in future, but the increasing rate tendency is going down.

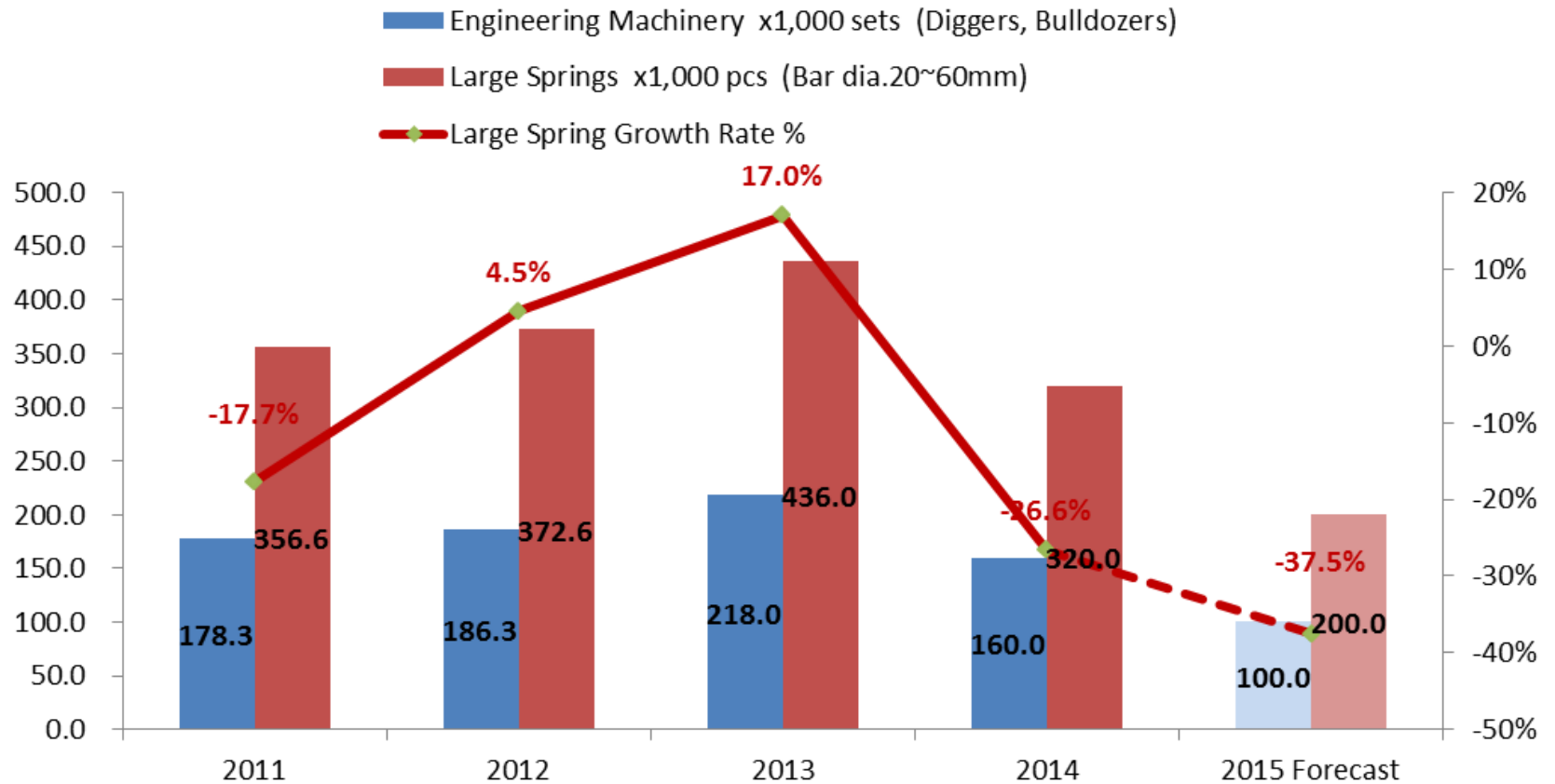
Railway Train (Freight & High-speed CRH $V \geq 200\text{km/hr}$) Industry Situation in China



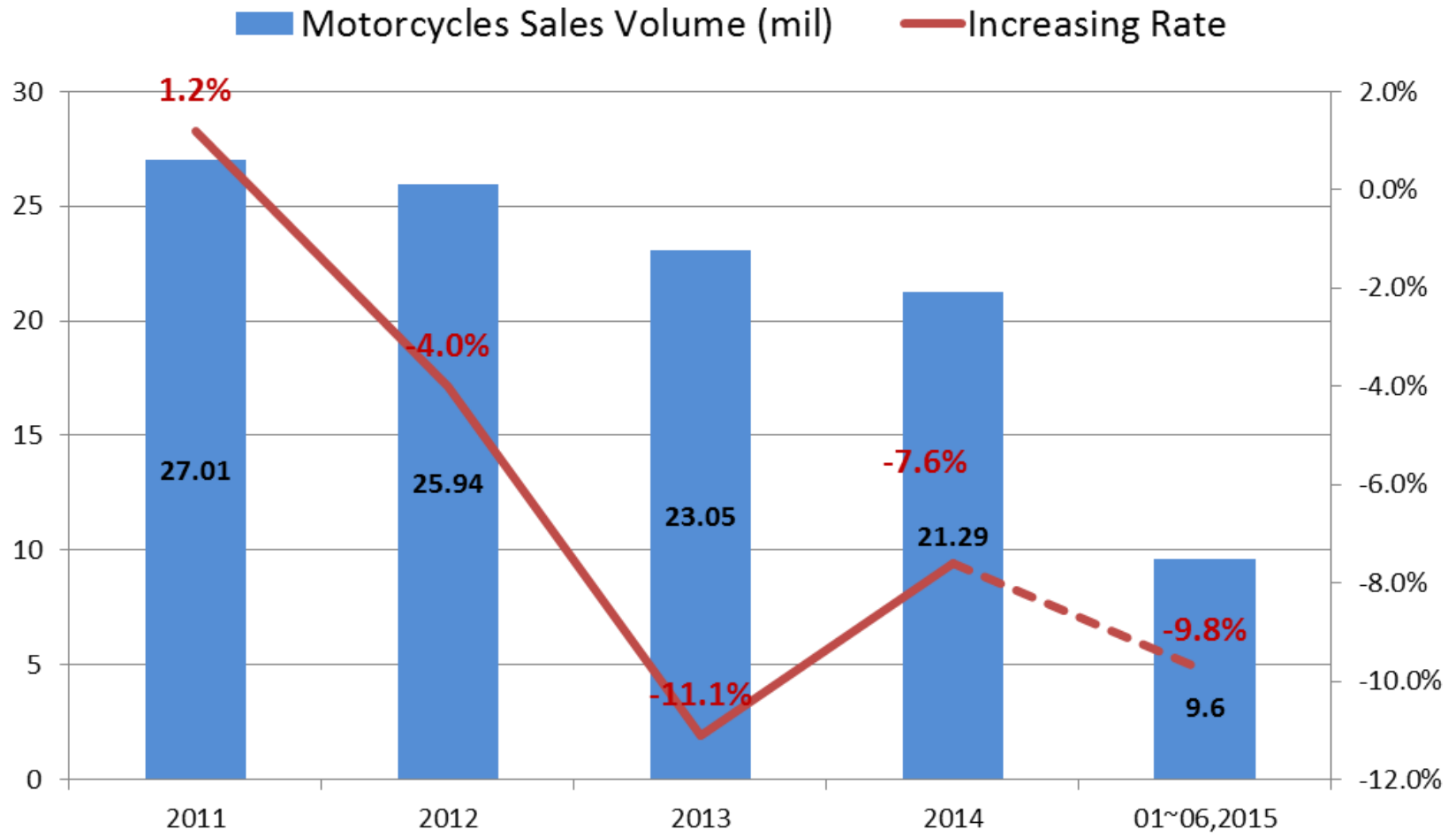
City Metro Industry Situation In China



Engineering Machine (Diggers, Bulldozers) Industry in China



Motorcycles Industry Situation In China



Statistics of Import & Export Springs Situation During 1~6th Month

Statistics of Import & Export Springs During 1~6th month in 2015

category	Imported Springs within 1~6 th Month		Exported Springs within 1~6 th Month	
	Volume (Kg)	Sum of Money (x10,000 US\$)	Volume (Kg)	Sum of Money (x10,000 US\$)
Copper Springs	81234	2869.28	45103	570.31
Springs without name	1391363	2693.86	11371748	5202.39
Special Steel Springs for Railway Industry	125600	223.96	893395	216.02
Special Steel Coil Springs	14247147	15718.52	28870390	9812.71
Railway Train Coil Springs	828406	683.61	622872	138.27
Leaf & Flat Springs	1235413	3933.89	7395480	1649.00
Leaf & Flat Springs for Railway Industry	20161	71.68	21215	29.95
Total:	17929324	26194.80	49220203	17618.65

Import springs are concentrated in copper springs (electronic industry), special material springs and flat springs. The value of import springs are much bigger than export currently.

Thanks for your attention.

ZHANG Jun

Professor & Senior Engineer.

Secretary-General of CHINA SPRING SPECIALITY ASSOCIATION

[Http://www.cssa.org.cn](http://www.cssa.org.cn)

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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic

Petr Hudy
Tomas Sadilek

ZDB Dratovna a.s.
Czech Republic

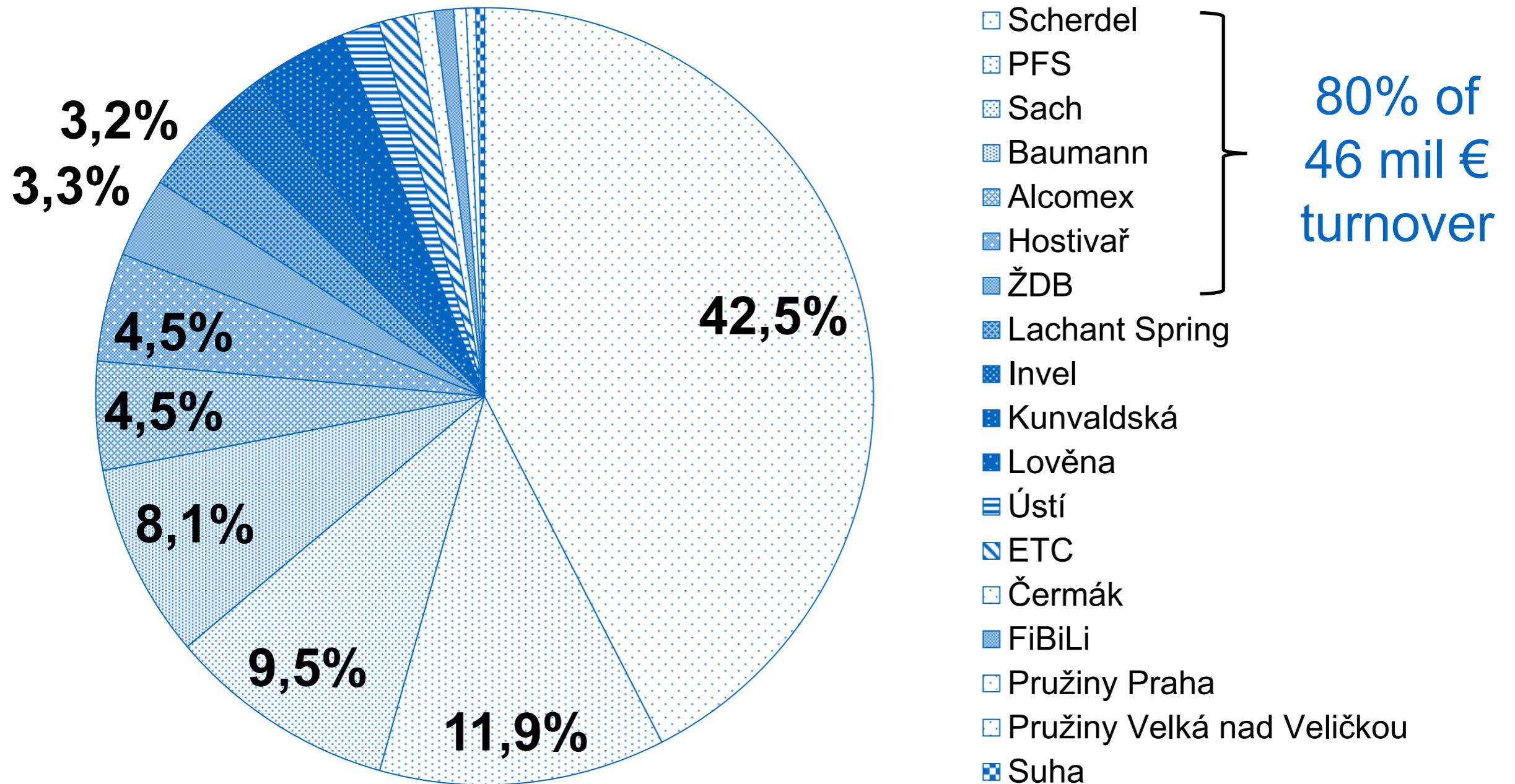




THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic

- **18 Companies** operates in the Czech Republic
- Total turnover **46 mil €** in 2015
- **980 Employees**

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic



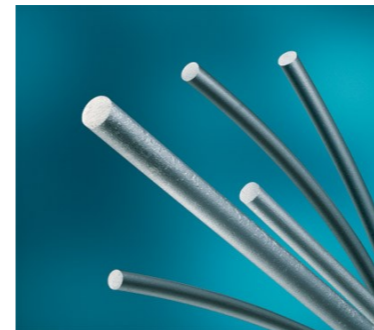
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic

TRINEC IRONWORKS PRODUCTS



- **Coke**
- **Raw iron**
- **Steel**
- **Wire rods**

Wire rods



Drawn Steel



Wide Steel

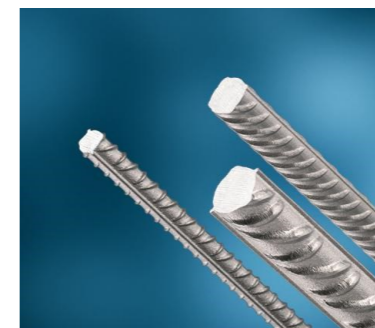


- **Drawn wire**
- **Springs**

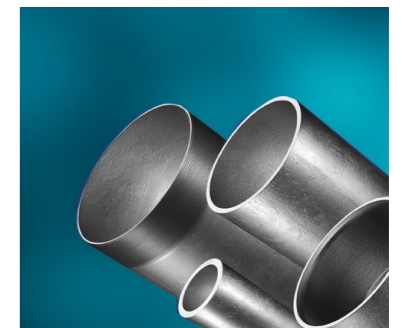
Rails and Accessories



Rebars



Seamless Tubes



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic



ZDB PRODUCTS

Rope and spring wire



- **Bright and galvanized**

- **DIN 17223-1**
- **EN 10 270-1**

- **Diameters 0,50–7,00 mm**

**CHQ and
bright wire**

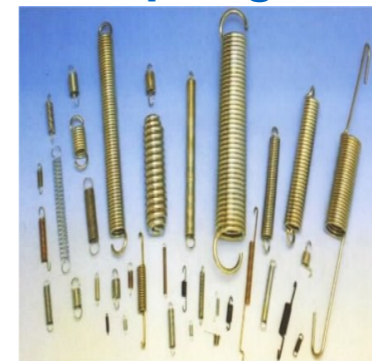
Steel ropes



**Steel cords
and bead wire**

Springs

Metal cloth





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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Czech Republic

Thank you for your attention

ZDB Dratovna a.s.
Czech Republic

tomas.sadilek@zdb.cz



ESF Board Meeting, 24 September

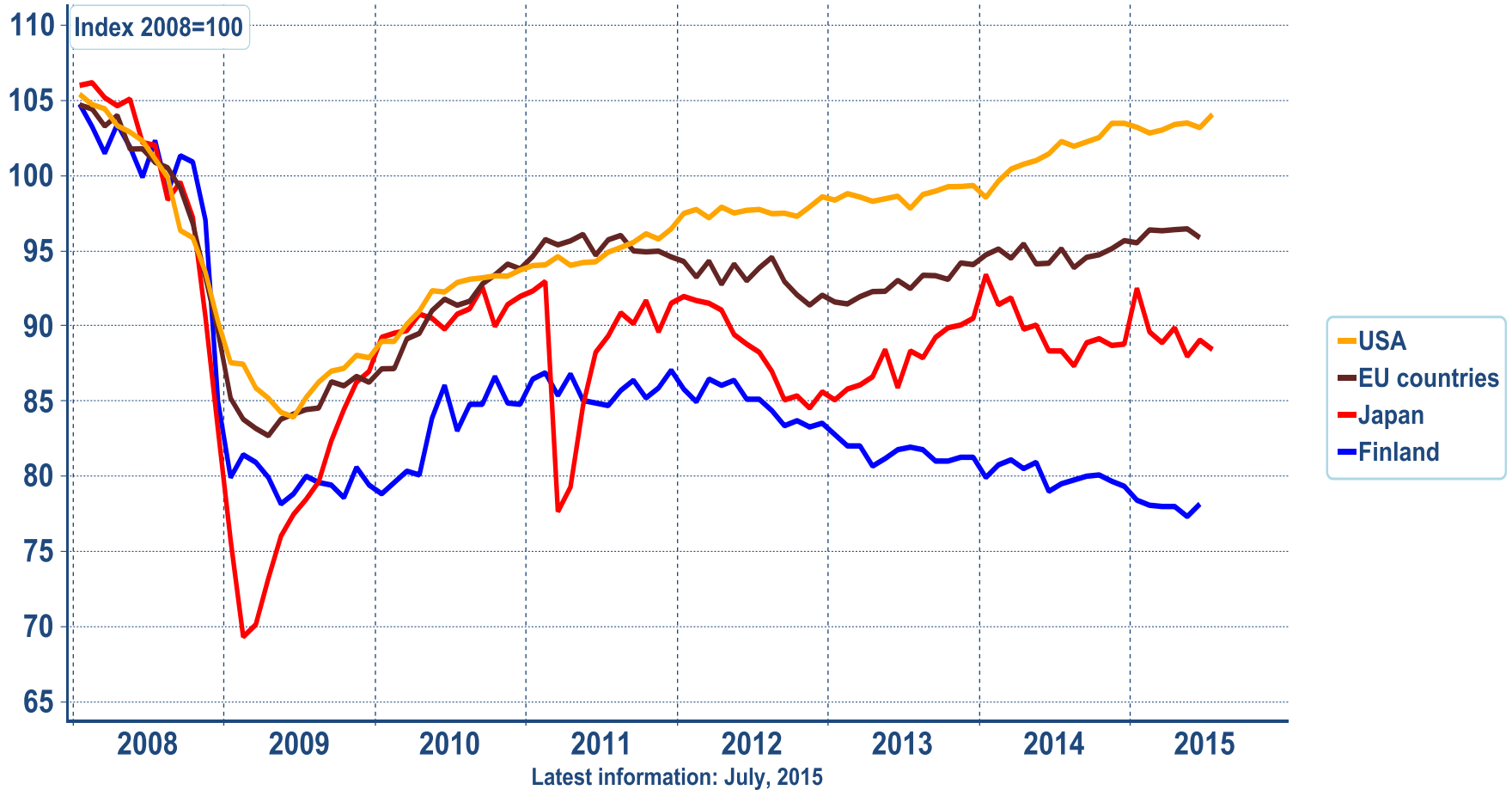
Economic Situation Review

Finnish Spring Association

meconet

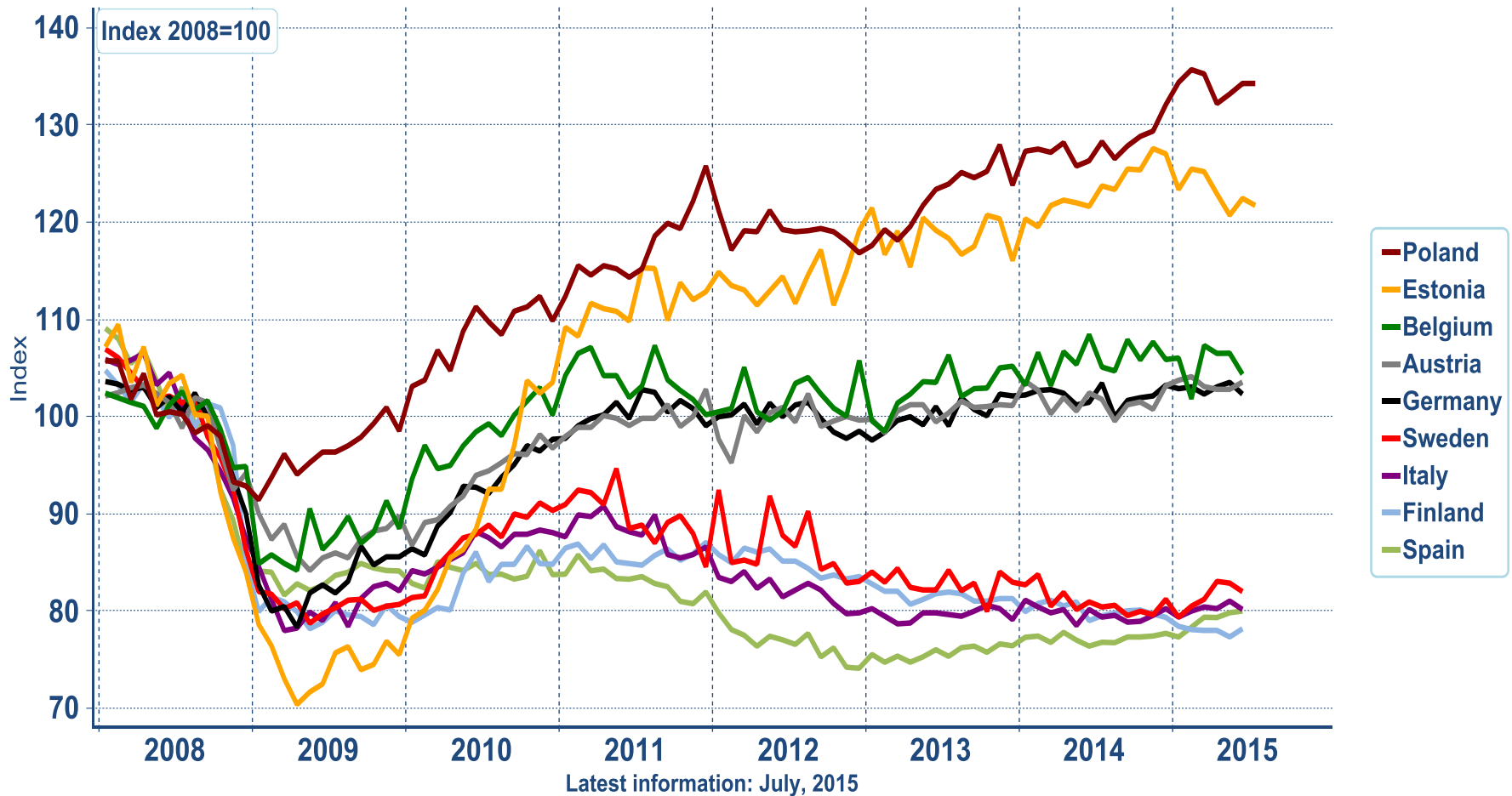
The Federation of Finnish
Technology
Industries

Industrial Production Volume in USA, EU, Japan and Finland



Source: Macrobond

Industrial Production Volume in EU countries

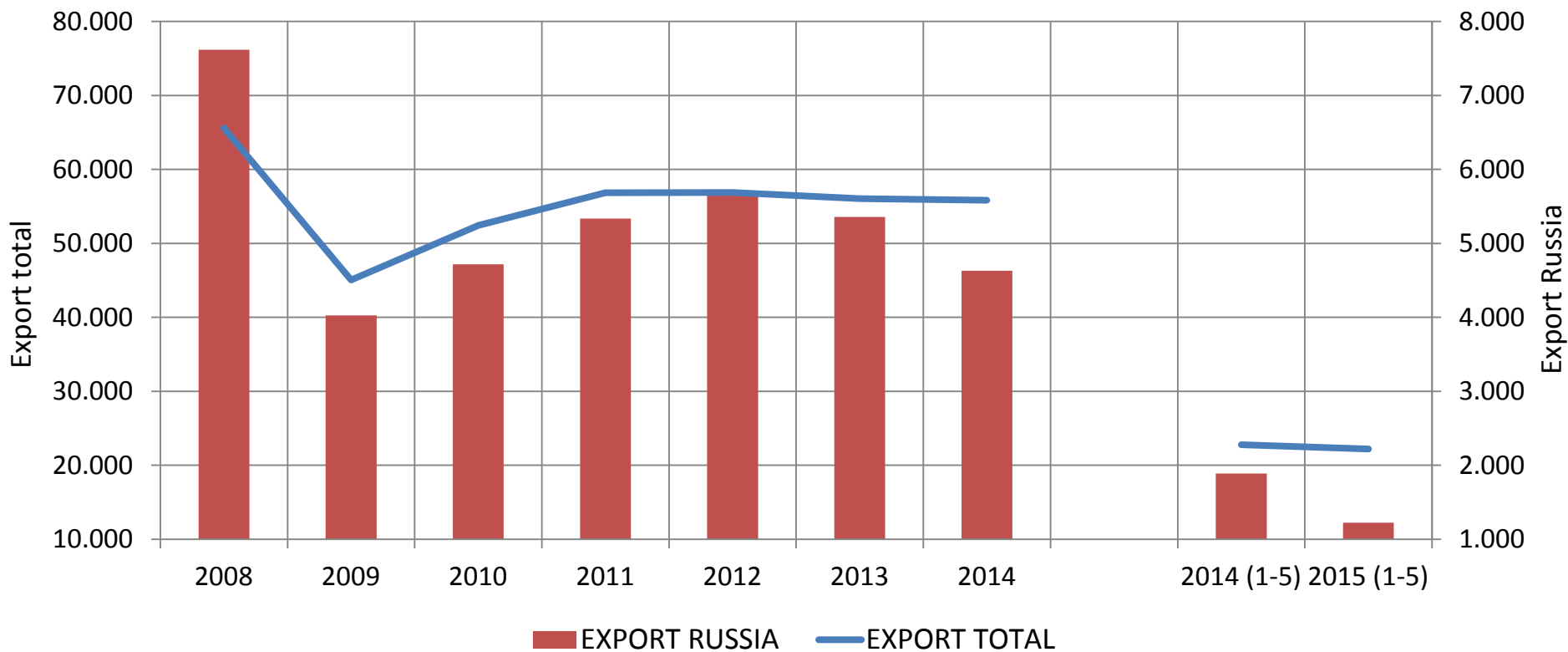


Source: Macrobond

Export of Goods from Finland 2008-2014



EXPORT FROM FINLAND 2008-2014 TOTAL & RUSSIA



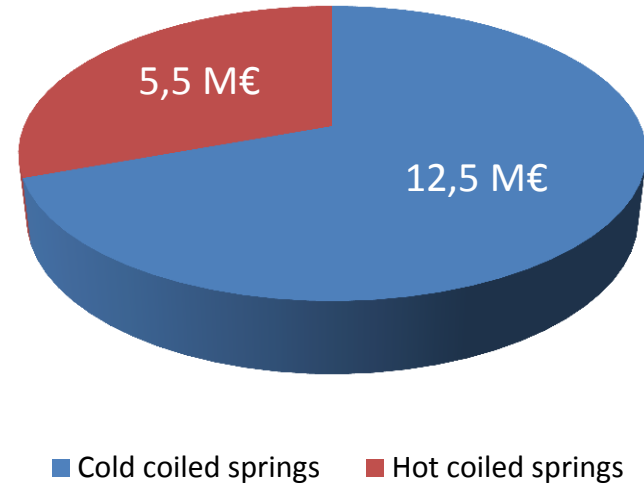
Spring Manufacturing in Finland

Production totally: 18 M€

Number of manufacturers:

- Cold coiled springs 6
- Hot coiled springs 1

Personnel: 90





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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Economical situation

	2013	2014	2015	2016
GDP	+0,7%	+0,2%	+1,1%	+1,8%

The industries represent 12% of the GDP

Production capacity used at 82,2%

Unemployment: 10,3%

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

SPRING MAKERS	68 COMPANIES
TURNOVER 2014	Estim. 350 MILLIONS €
EMPLOYEES	Estim. 2400

Structure:
approx 60% are small companies
Family owned



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Last Year results: 2014/2013: -6,34%

Above result is an average including not only the spring makers, but also the wire forming, and the chains according to a national business code. It reflects a trend.

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

2015 SITUATION






Q1: positive trend Q2: flat situation Q3: better Q4: very uncertain

The companies are facing a lot of different situations






in a flat domestic market and a weak export market

In particular, it depends on the exposure to different market segments

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

ELECTRICAL COMPONENTS	
AUTOMOTIVE < Domestic TRUCKS	
AGRICULTURE	
BUILDING & CIVIL ENGINEERING	
ENERGY (NUCLEAR +OIL&GAS)	

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

AIRCRAFT INDUSTRY	
AUTOMOTIVE < EXPORT	
TRANSPORTATION	
PHARMA.	
TEXTILE	

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

New laws are impacting the balance sheet:

Improvement of margin level due to

Reduction of social charges on low salaries (-6% in 2015)



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Investment in the industry

	2013	2014	2015	2016
Evolution	-0,2	+2,2	+1,1	+4,4

New law in favor of the investment:

13,3% of the investment is deductible from the income tax over the amortization period

Level of investment in the spring industry: 10%



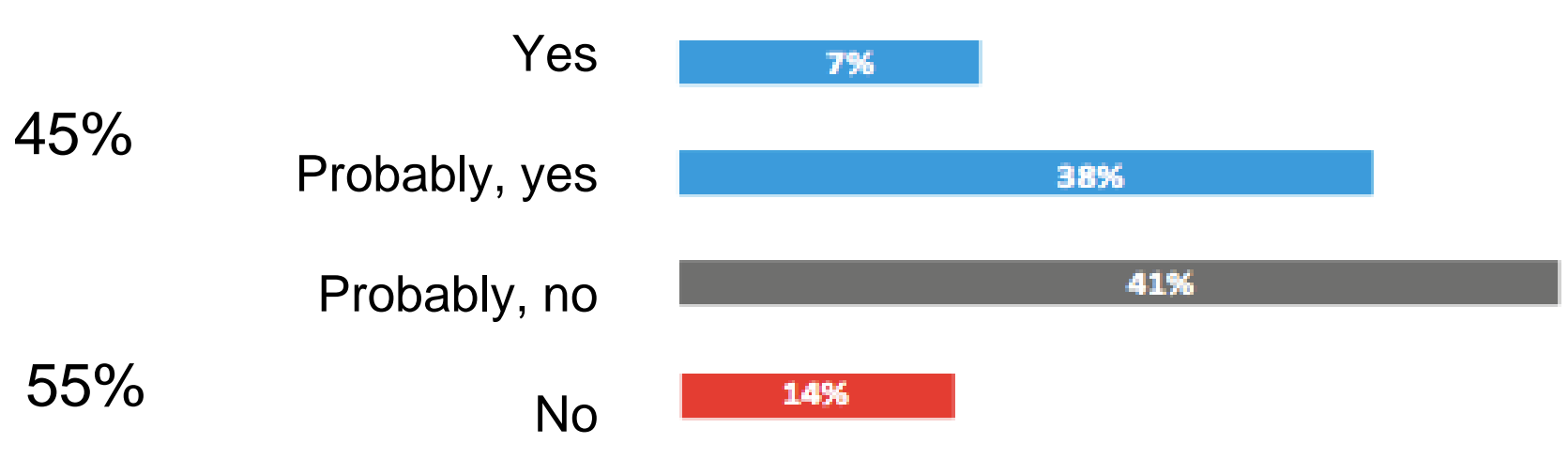
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

GREAT DIFFICULTIES TO FIND SKILLED WORKERS

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Survey – March 2015

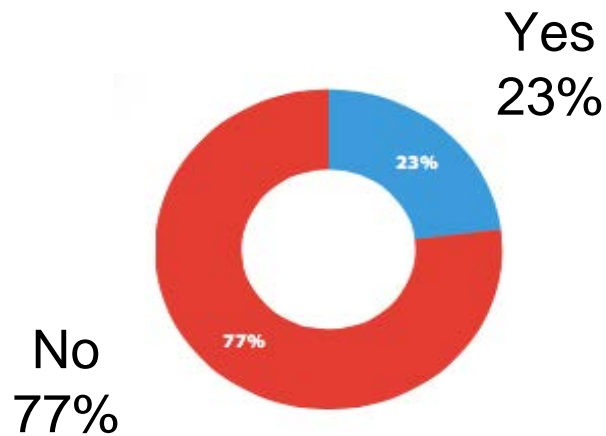
Do you want to work in the industry ?



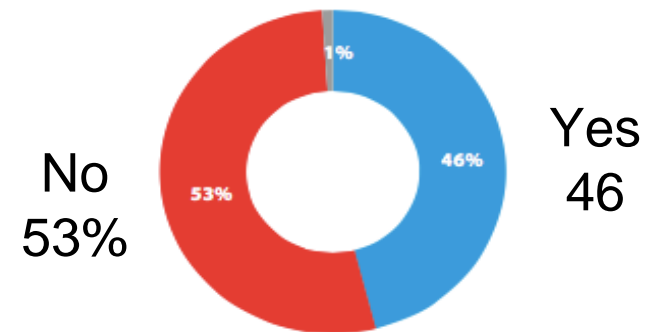
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Do you think it is easy to find a job in the industry:

In France:

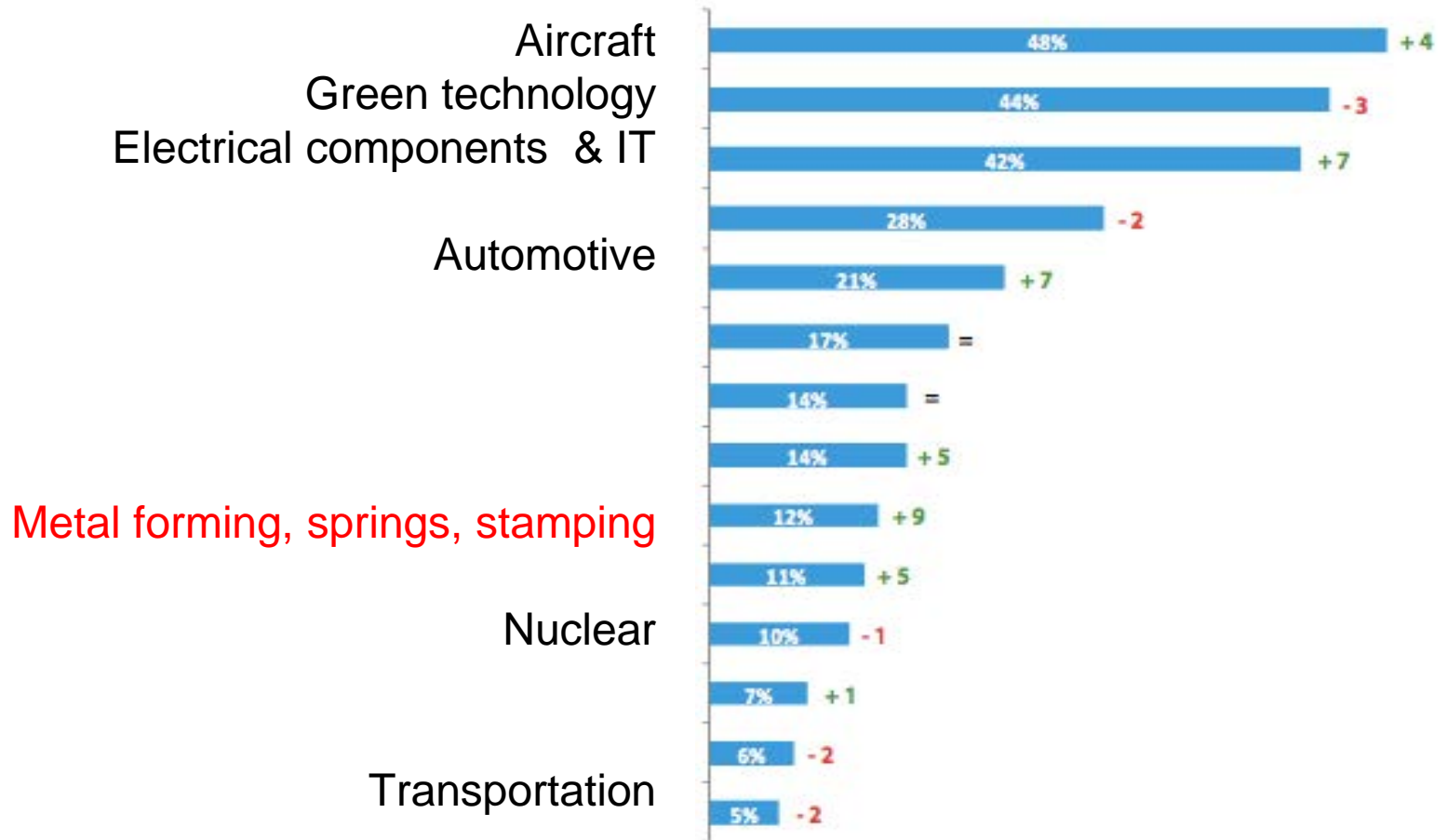


In an other country:



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Where do you want to work ?



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Our actions:

We have to communicate about our business:
Open door for students and teachers: « Spring time of Industry »

We have set up a one year training session for apprentice:
The second session will start in january

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN FRANCE

Conclusion:

2015/2014: + ???

A lot of question marks due to:

- the global situation
- the lack of visibility,
- a flat domestic market
- a weak export market
- ...

General Business in Germany





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Number of Spring Manufacturers	170	(estimated)
VDFI members	99	
Number of Employees	12.000*	
Sales Amount, Euro	2.105.000.000 €*	
Weight, kt	463.200 t*	
* all data from European statistic office		

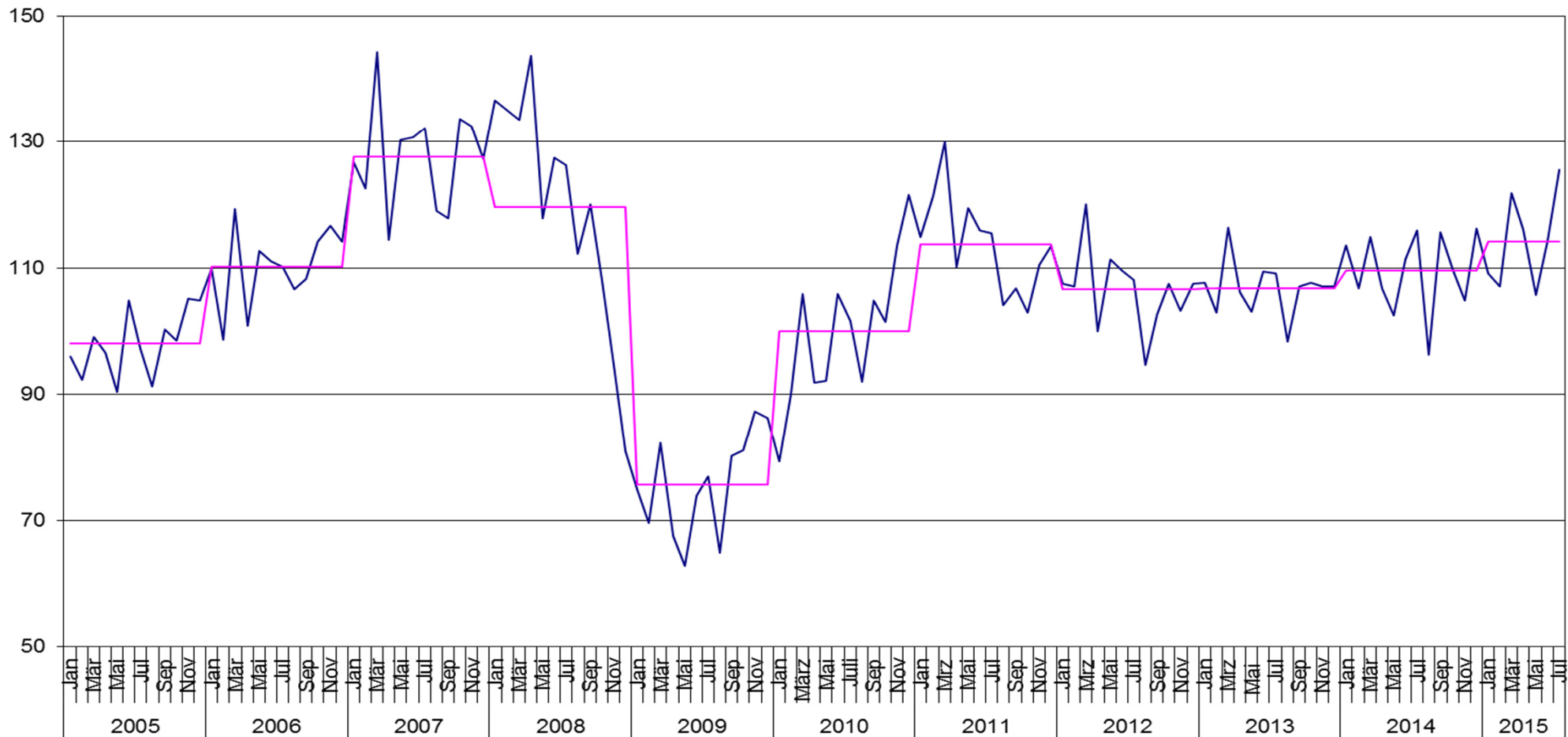
Inquiry of Business Development							previous years	
VDFI Members - cold formed industry							2014	2013
reporting period : 1. half year 2015 to 1. half year 2015								
development of turnover in reporting period	negativ	0 bis 7 %	> 7 bis 15 %	> 15	0	0	0	0
<i>as percentage</i>	30	36	25	9	4,1	8,2%	0,7%	
export quota from turnover in reporting period	bis 20 %	> 20 bis 40 %	> 40 bis 60 %	> 60 %	0	0	0	
<i>as percentage</i>	25	36	32	7	33,8	34,5%	33,0%	
turnover expectancy for the next 3 month	negativ	0 bis 7 %	> 7 bis 15 %	> 15	0	0	0	
<i>as percentage</i>	19	79	2	0	2,2	6,5%	3,1%	
volume of orders in month	bis 1,5 Mon.	> 1,5 bis 3 Mon.	> 3 bis 4,5 Mon.	> 4,5 Mon.	0	0	0	
<i>as percentage</i>	0	14	27	59	5,7 Mon.	5,6	4,7	
capacity utilisation	bis 70 %	> 70 bis 80 %	> 80 bis 90 %	> 90 %	0	0	0	
<i>as percentage</i>	11	36	43	9	82,4	82,9%	78,3%	
change in number of employees	> -10 %	-10 bis 0 %	> 0 bis 8 %	> 8 %	0	0	0	
<i>in percentage</i>	0,0	42	49	9	2,1	5,6%	0,6%	
temporary stuff	= 0 %	0 bis 5 %	> 5 bis 15 %	> 15	0	0	0	
<i>as percentage</i>	34,1	39	20	7	4,6	7,8%	4,1%	
number of stuff ill	bis 3 %	> 3 bis 6 %	> 6 bis 8 %	> 8 %	0	0	0	
<i>as percentage</i>	14	59	25	2	4,8	7,2%	4,9%	
	Noten	1	2	3	4	5	6	0
business development in the next 6 month		1	20	20	2	1	0	2,6
business development in the next 6 month		1	15	25	2	1	0	2,7

1= very good 6 = very bad

development orders in machinery industry Jan. 2005 bis July 2015

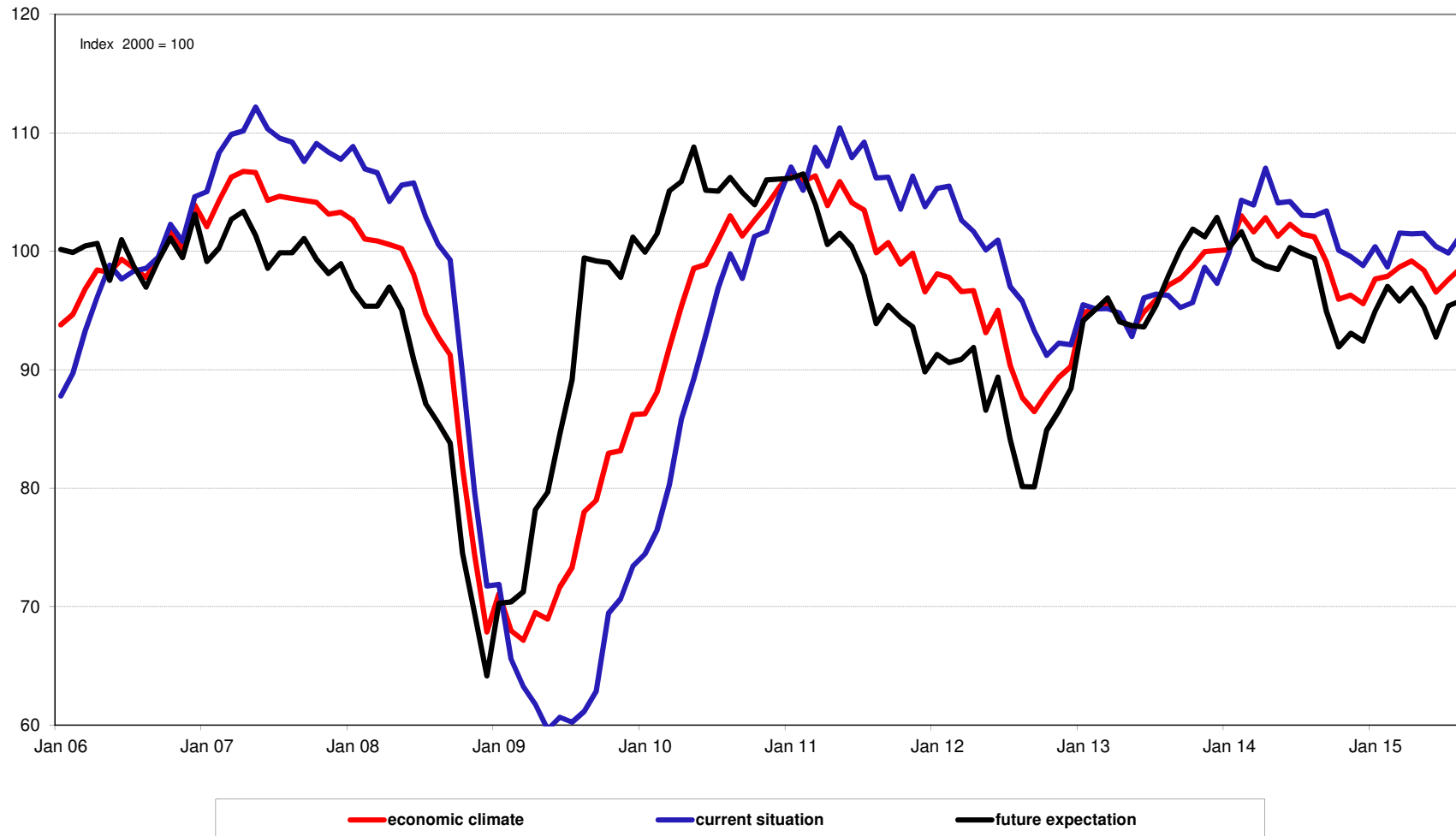
September 2015

(source: Stat.Bundesamt - index: 2010 = 100)



general business outlook supplier metal parts August 2015

25.08.2015

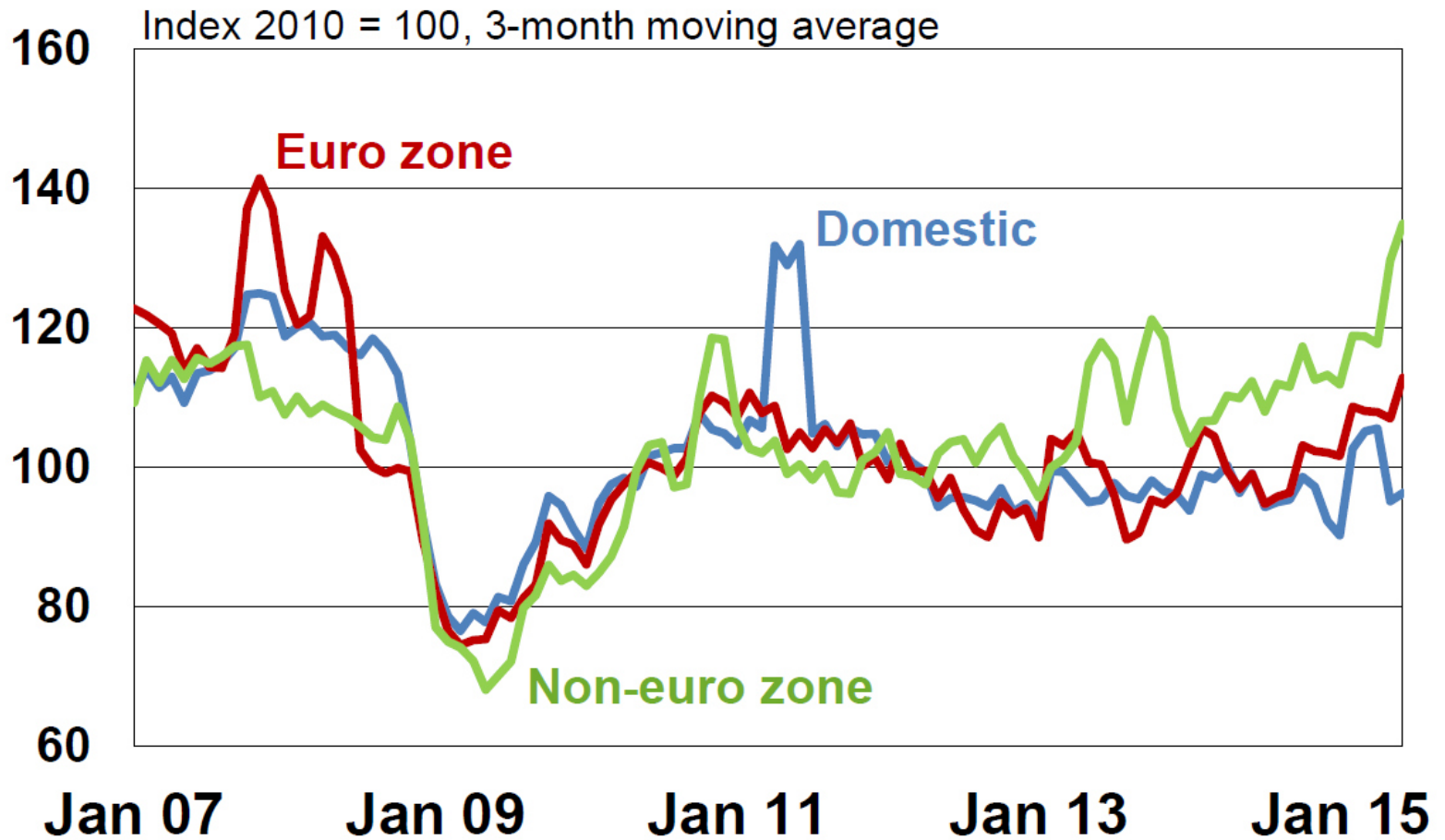


Quelle: Ifo München, ArGeZ Arbeitsgemeinschaft Zulieferindustrie
saisonbereinigt, Saldo aus positiven und negativen Bewertungen

New Orders

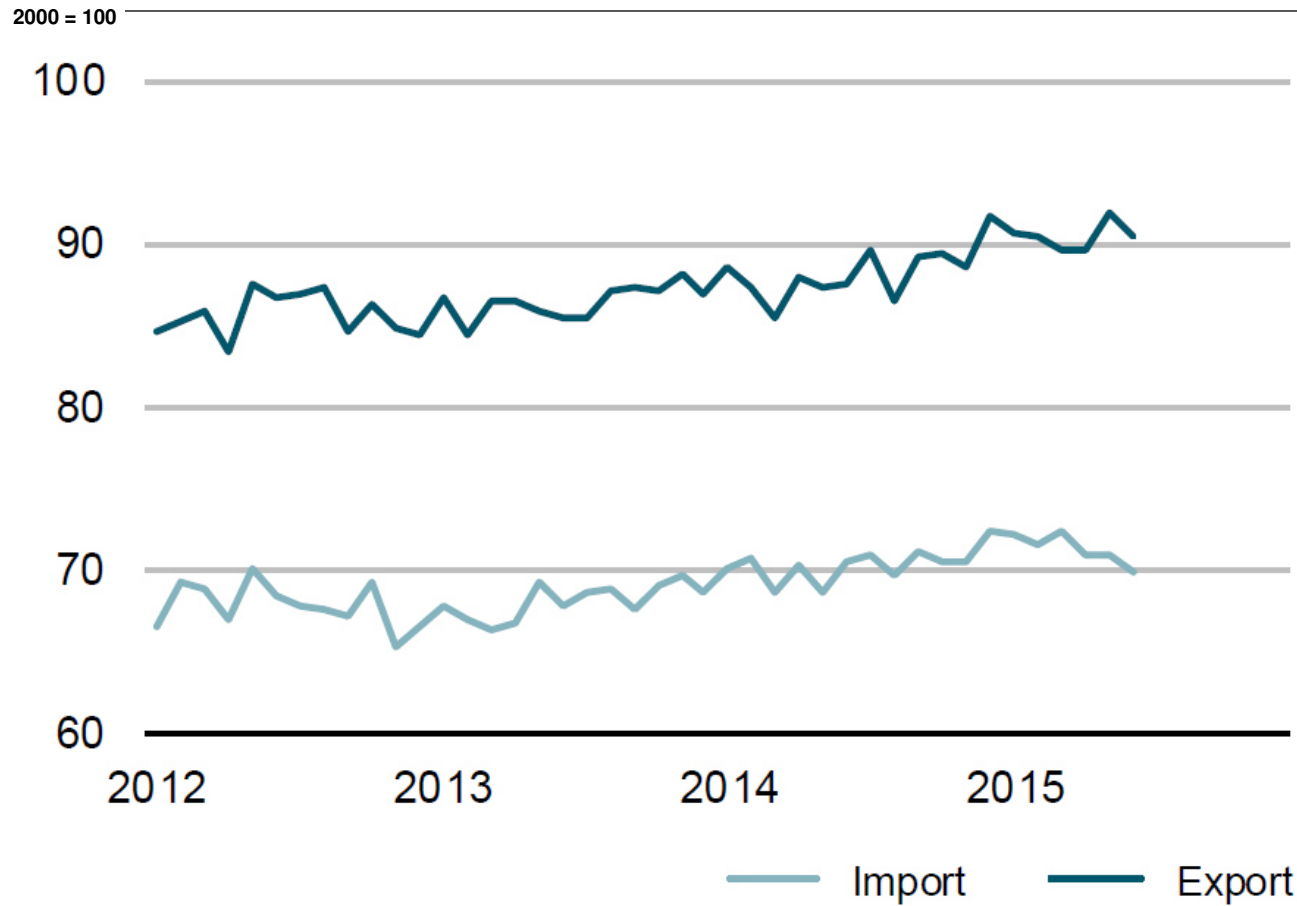


ZVEI:
Die Elektroindustrie



Source: Destatis and ZVEI's own calculations

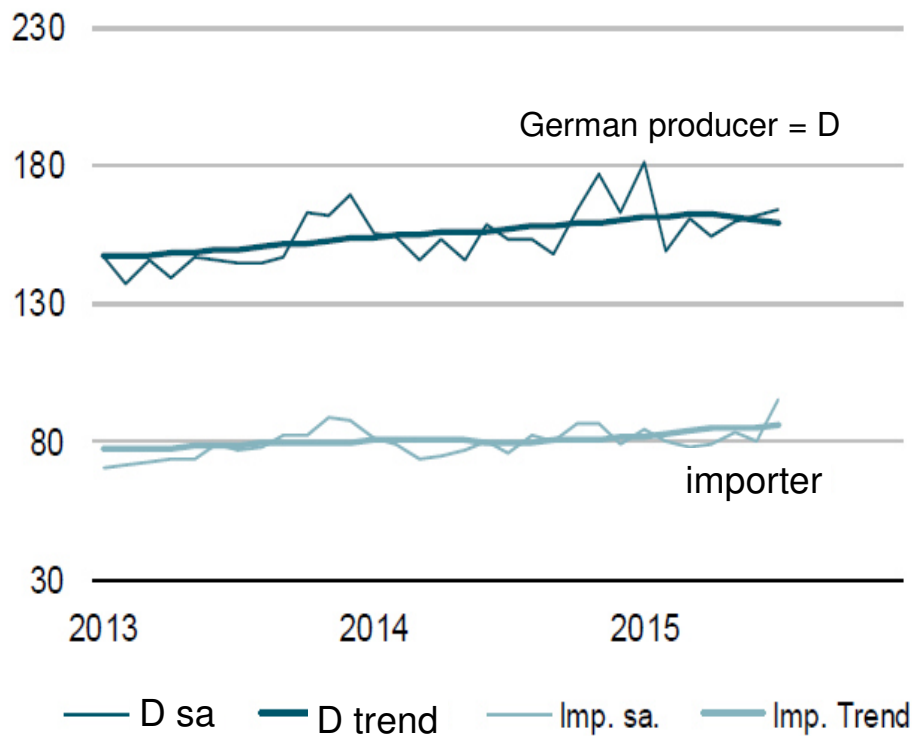
Germany foreign trade



Quelle: Feri EuroRating Services AG

inland order

In 1.000 cars

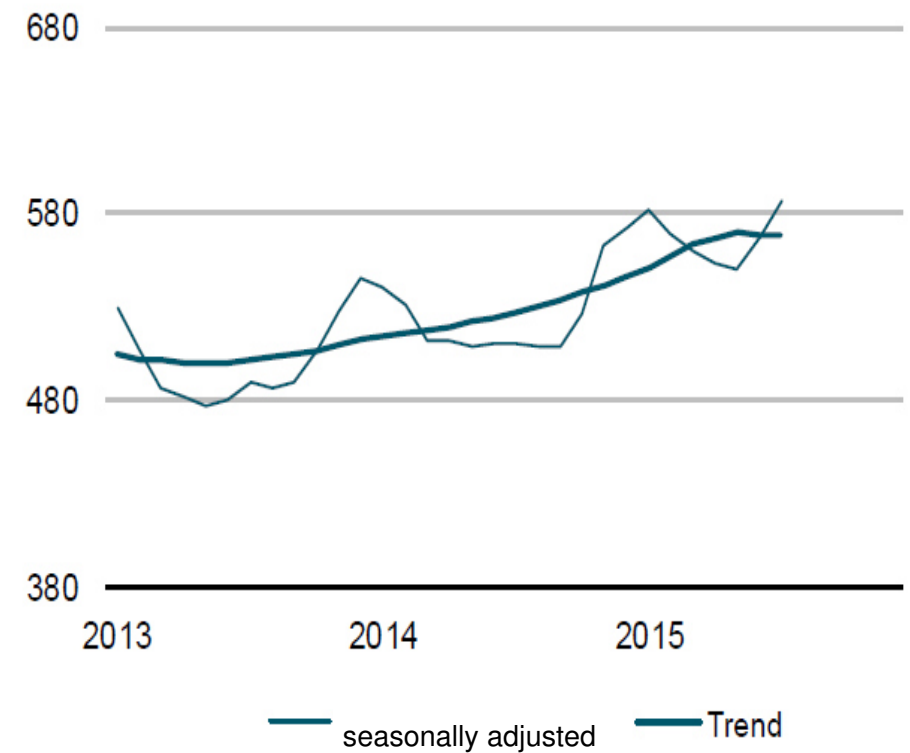


sa= seasonally adjusted

Quelle: VDA

total order

In 1.000 cars



Quelle: VDA



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Thank you for your attention

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE



Prof. Dr. Roselita Fragoudakis

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

- Depression
- Austerity Measures
- Bankruptcies of companies
- Unemployment rises (10% to 27%)
- Change in the political scene
- 3 Memorandums
- Referendum
- Capital Controls



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

Greek GDP 2010-2014

	2010	2011	2012	2013	2014
GDP growth	-5.4%	-8.9%	-6.6%	-3.9%	0.8%
Inflation (Annual Average)	4.7%	3.3%	1.5%	-0.9%	-1.3%
Productivity (EU-28=100)**	93	89.9	91.8	92.8	n.a.
Unemployment	12.7%	17.9%	24.4%	27.5%	26.5%
National Investment (%GDP)**	3.2%	2.5%	2.5%	2.7%	3.8%
Exports*	21.1	24.3	27.6	27.6	27.2
Imports*	50.5	48.4	49.3	46.9	47.7

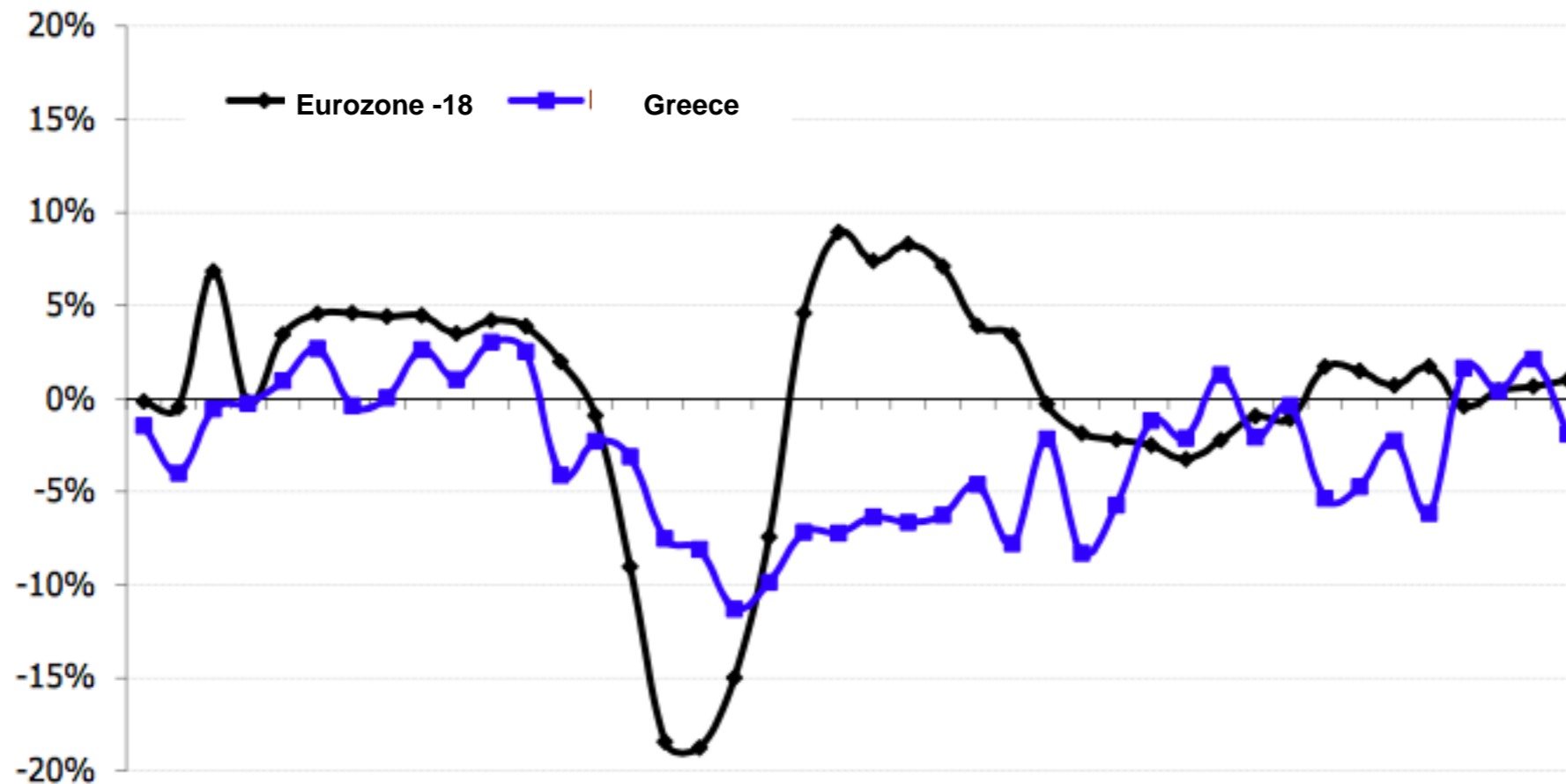
*Billions €

** Source: Eurostat

Source: Greek Statistical Authority

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

Industrial Productivity 2005-2015: Greece and the Eurozone



1st to 4th trimester for
2005 to 2015, including May 2015

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

The Greek Spring Industry

Helical (Coil) Springs

6 companies

(Central and Northern Greece)

15-30 staff members

Leaf Springs



1926 : V. Vadokas opens the first factory to produce leaf springs in Greece.

1962: Autokinitistiki S.A. founded by A. Vadokas.

1998: a new 15,000 m² facility is built in Thebes (90 km outside of Athens).

The company's headquarters are located in Athens

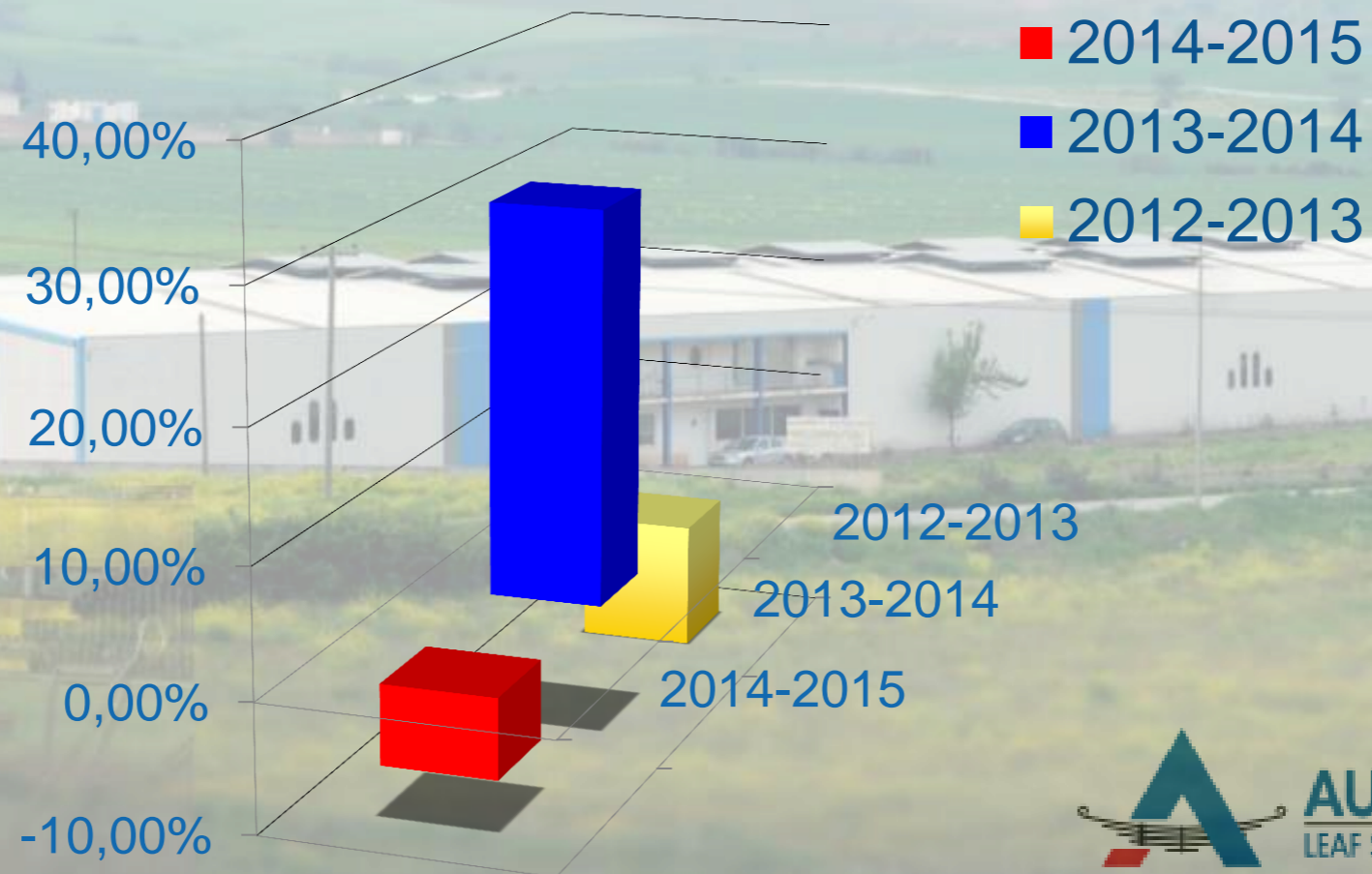
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE



- The company's workforce consists of 55 employees and 6 field associates/consultants.
- Until 2008 there was an annual rise of production and sales of 7%.
- Share Capital: €7.301.000.
- Annual Turnover: €2.000.000.
- Production: 50.000 kg/month / 600.000 kg/year.
- Production Costs 55% of annual turnover
 - 18% raw material and primary costs
 - 37% other costs

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

Sales



May to August 2015 -58%

September 25, 2015



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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

Helping the Greek Industry

NSRF: National Strategic Reference Framework

GSRT: General Secretarial for Research and Technology

*Supporting New Companies' Research and
Development Activities*

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE



Aristotle University of Thessaloniki



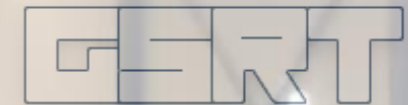
Laboratory of Machine Elements and Machine Design



Physical Metallurgy Laboratory



AUTOKINITISTIKI S.A.
LEAF SPRINGS - PARABOLICS - AIR SPRINGS



GENERAL SECRETARIAT FOR RESEARCH AND TECHNOLOGY

In 2012 our company collaborated with Associate Professors Georgios Savaidis and Nicolaos Michailidis in a study on the mechanical behavior and fatigue of our products. The results of the study were the optimized design and manufacturing process of leaf springs, as well as a detailed analysis of the technological parameters, heat and surface treatments involved.

Results of the study are published in peer-reviewed journals and presented at international conferences:

International Journal of Structural Integrity
Procedia Engineering
Key Engineering Materials



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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country GREECE

Thank You



Leoforos Kifissou & Drakontos, 104 42

Athens, Greece

Tel: +30 210 5149521

Email: email@autokinitistiki.gr

September 25, 2015

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

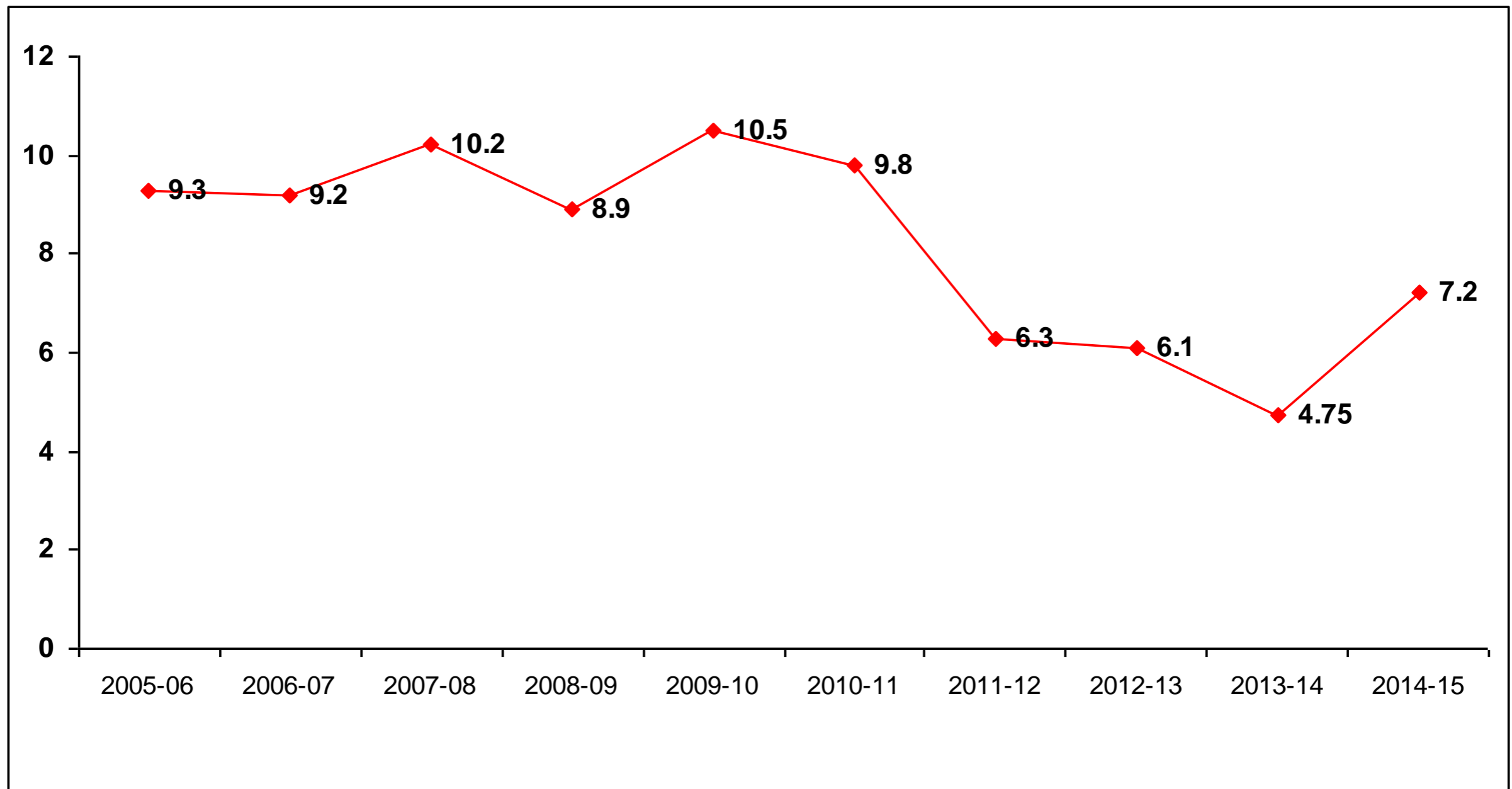


Stumpp, Schuele & Somappa , India

speaker

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

India GDP Growth Trend



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN **Country**

Indian Automotive Production

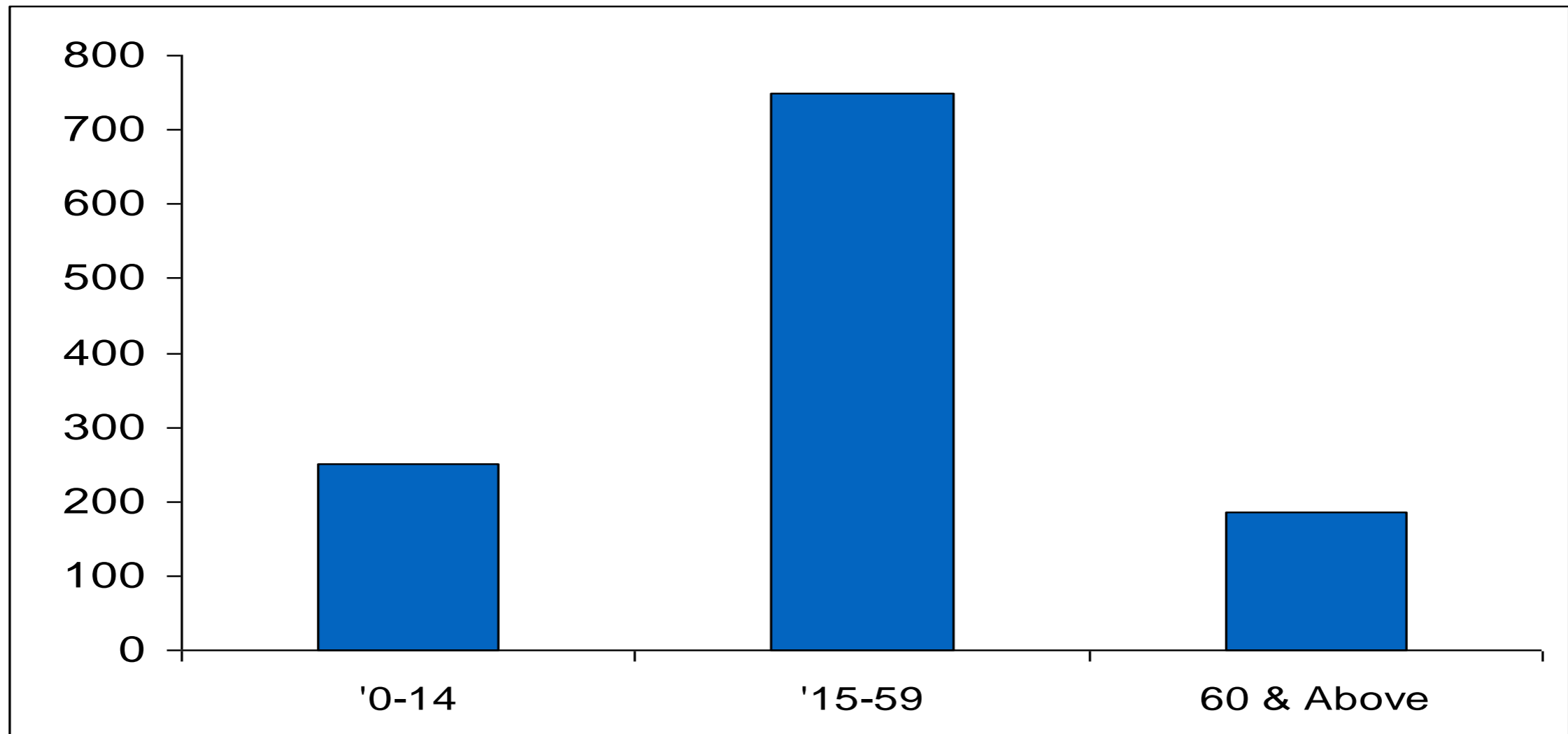
Vehicle	2010	2011	2012	2013	2014	% Growth Over Yr2013
Passenger Cars	2.98	3.14	3.23	3.00	3.22	7.33
Commercial Vehicles	0.75	0.93	0.83	0.71	0.69	-2.82
Three Wheelers	0.6	0.8	0.88	0.84	0.94	11.90
Two Wheelers	10.51	13.35	15.43	15.74	18.49	17.47

in Millions

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

India's Strength

Population (in Millions)



Age Dependency Yr 14 – 54.34%
 Median Age – 26 Years
 Vehicle Per Capita -25Veh/1000 Person

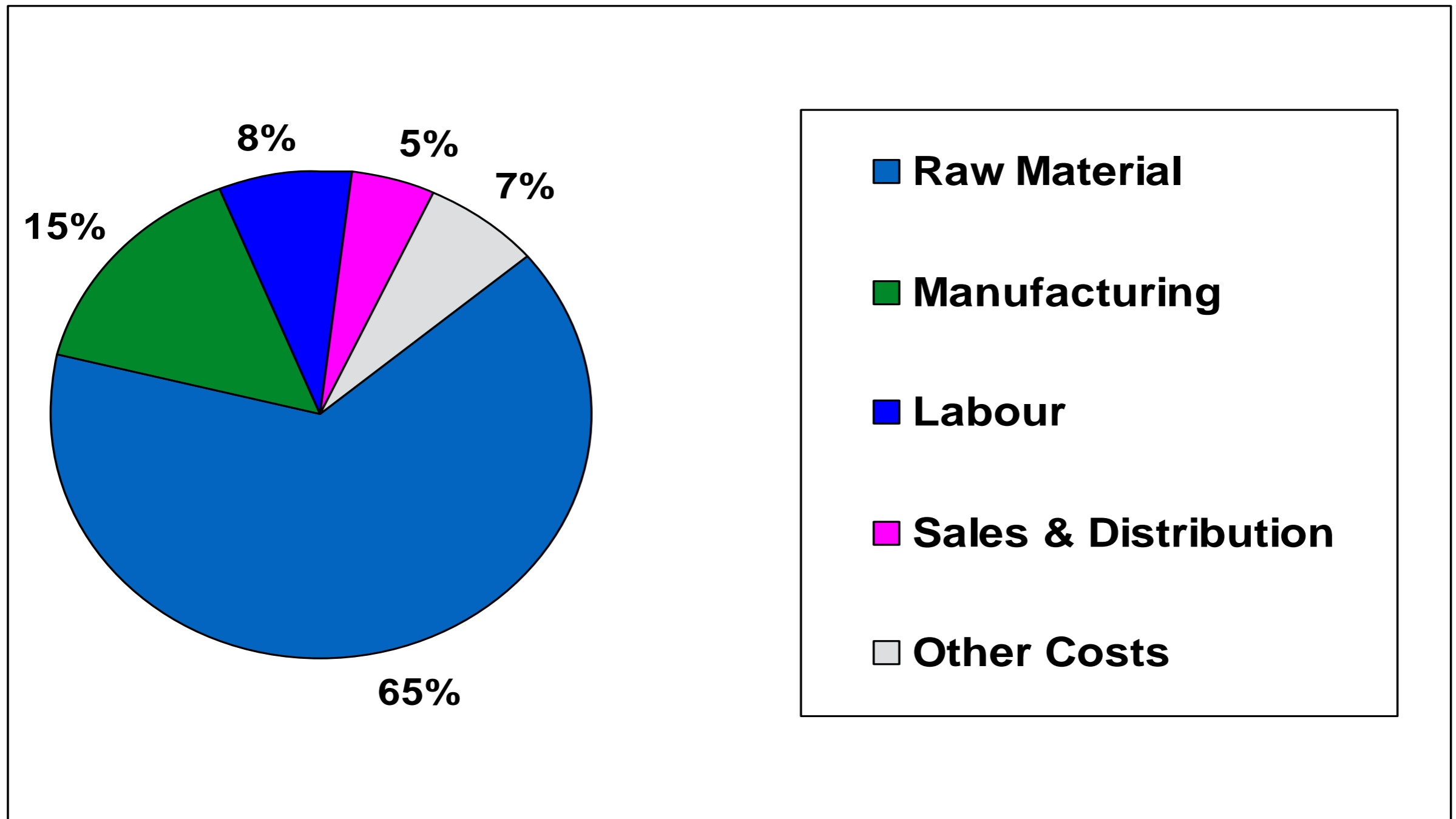
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

Indian Spring Industry

NO OF PLAYERS	18 Major Players
<i>Multinational Organisations</i>	<i>4 Players NHK/DAEWON/RPKS/MUBEA</i>
<i>Joint Venture Organisations</i>	<i>3 Players SSSS/MSM</i>
<i>Indian Organisations</i>	<i>12 Players</i>

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

Indian Spring Business Environment



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

Spring- Business Challenges in India

- With the growth experienced until Yr2010, most of the players have built capacities to meet tomorrow growth today.
- With the decline in volumes, due to economic recession, managing the **FIXED COST** is a challenge.

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

Spring- Business Challenges in India

- To survive in highly cost conscious Indian market, the biggest challenge for Indian Automotive Industry, including Spring Industry remains – **“HOW TO DESIGN TO COST AND FUNCTION, THAN COST TO DESIGN”**
- Continual improvement to bridge the gap between Ideal cost to Actual is also a challenge.

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

Spring- Business Challenges in India

- Yr2015 is crucial on Growth , since it remains **THE KNOWN UNKNOWN**
- While the worst is over , since the market is at it's low, however the worst is over, will be severely tested in the year 2015, despite India providing a clear mandate to rule.



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THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Country

THANK YOU



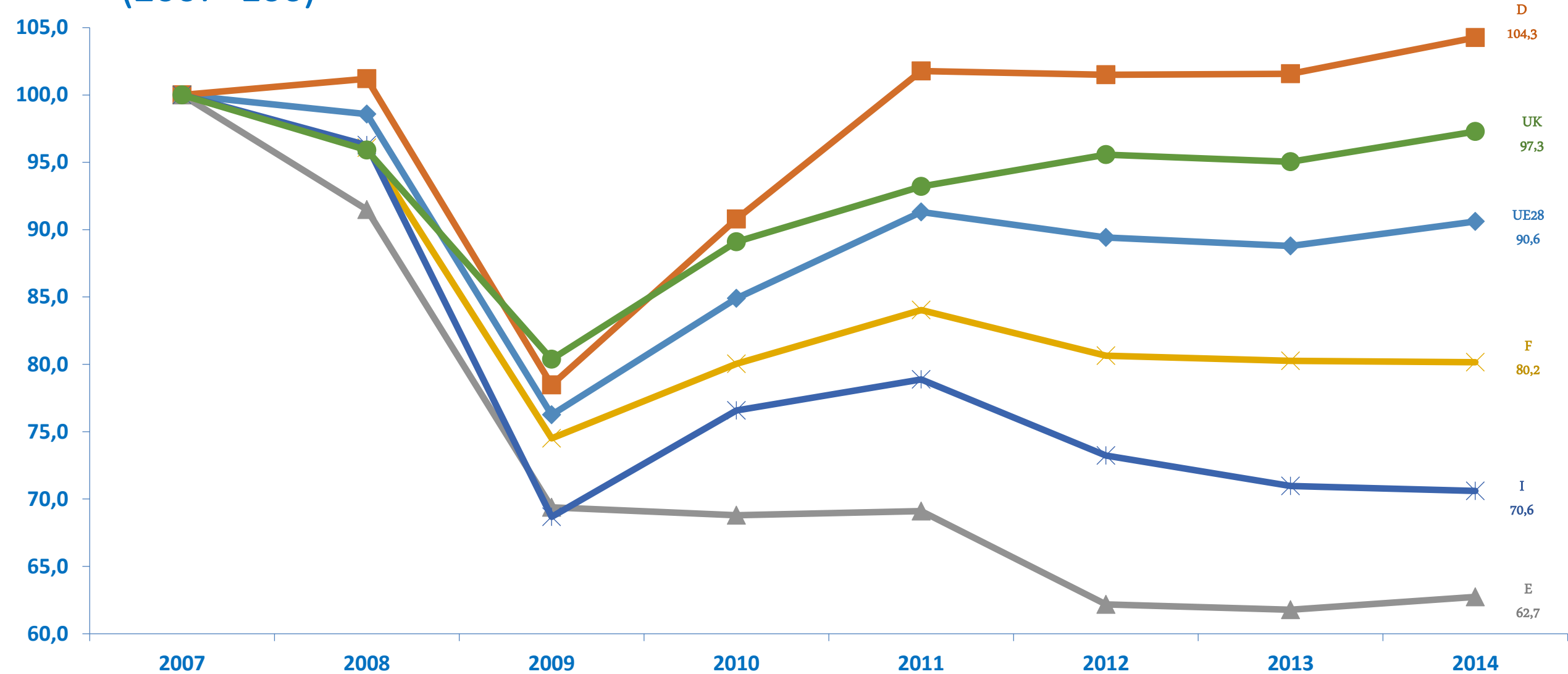
8th International Congress of Spring Industry



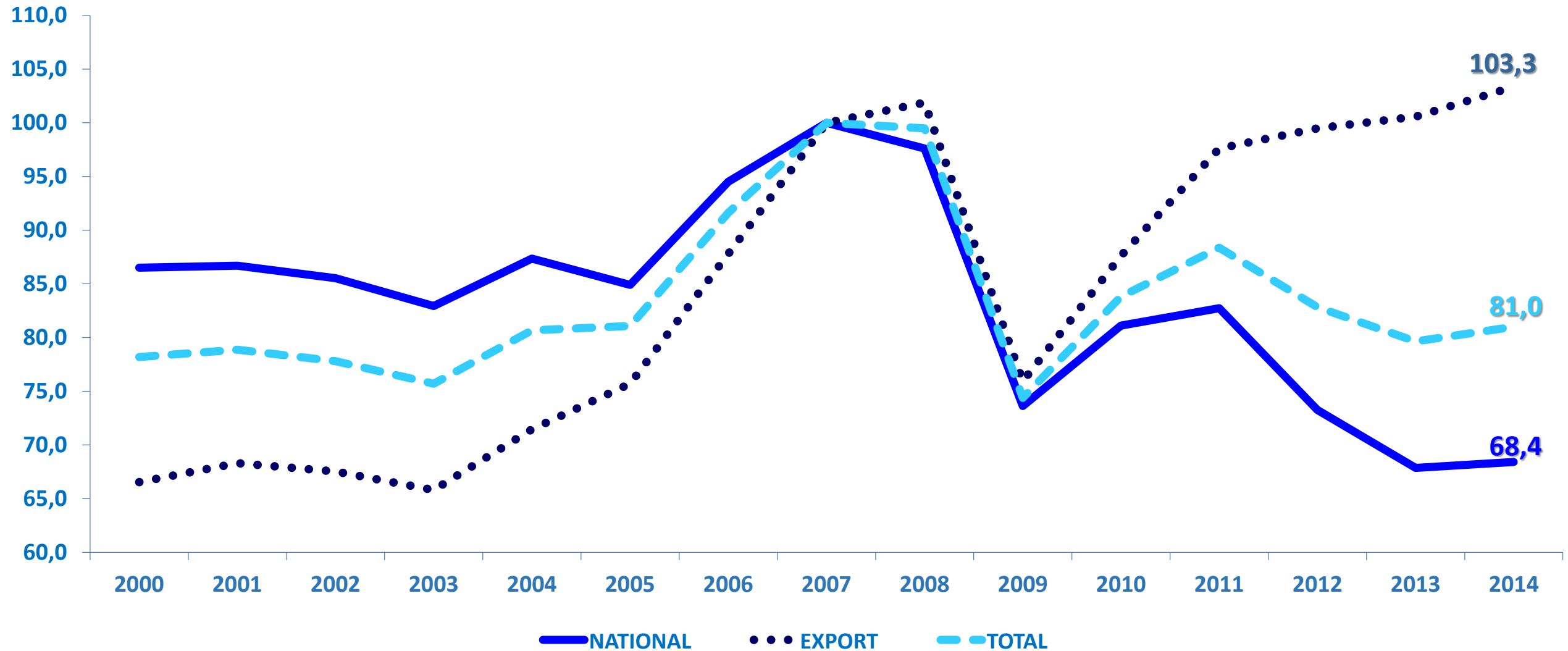
THE ECONOMIC SITUATION AND THE SPRING INDUSTRY IN ITALY

Federico Visentin

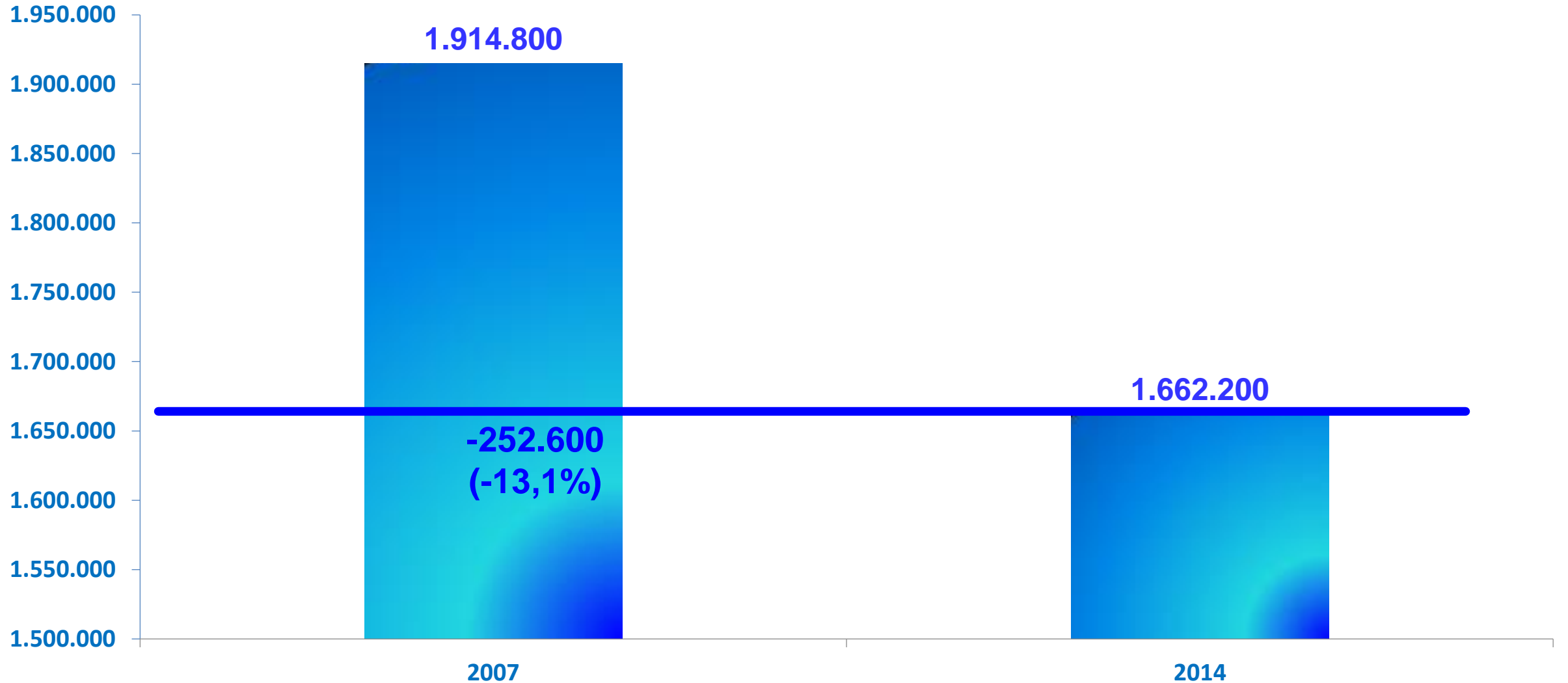
Metalworking Industry in UE (2007=100)



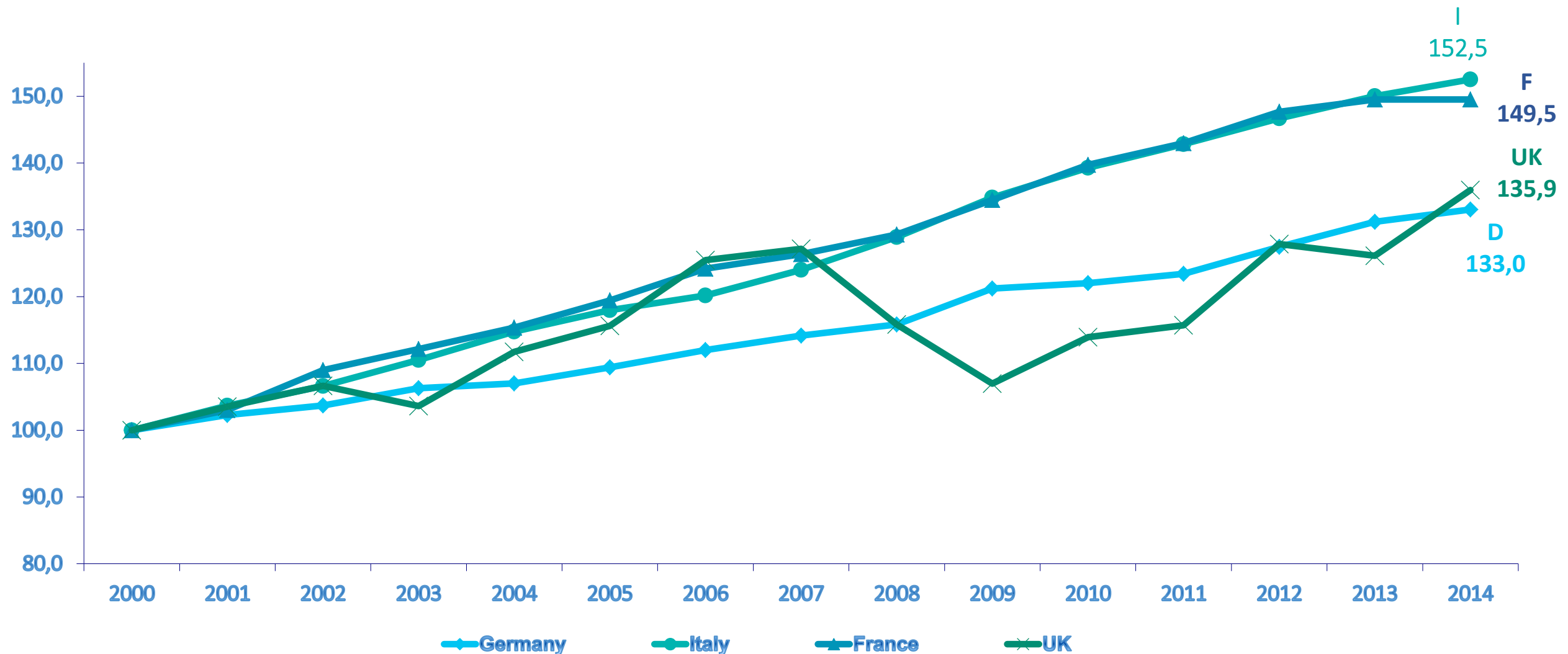
Italian Metalworking Industry – Turnover Index (2007=100)



Italian Metalworking Industry – number of employees



UE Metalworking Industry – Labour Cost





GENERAL ECONOMIC INFORMATION

We are now well over half of the year and is emerging a 2015 still with uncertainties and with some concerns too.

It is now certain that the "turning point", the "big shot" there will not be even this year and if there will be growth, this seems to be related to a few sectors lucky but overall too slow and limited.

De facto, we expect to close 2015 with GDP up slightly recovery (+0.70 yoy - + 0.30% in the third quarter).

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GENERAL ECONOMIC INFORMATION

The cost of borrowing is very low, at least for companies with budgets in order and the banks seems better disposed to finance businesses.

Investments therefore have a slight but steady increase.

It remains high the payment difficulties while the number of intolerance seems down.

The unemployment, according to the latest data is decreasing from 13.5% to 12%.

As well, there are reductions for the unemployment benefits. In July -28%.

The figure more significant is the global value which sees in 2014 1,052,375,000 authorized hours while for the period January-July 2015 authorized hours were 418 million.

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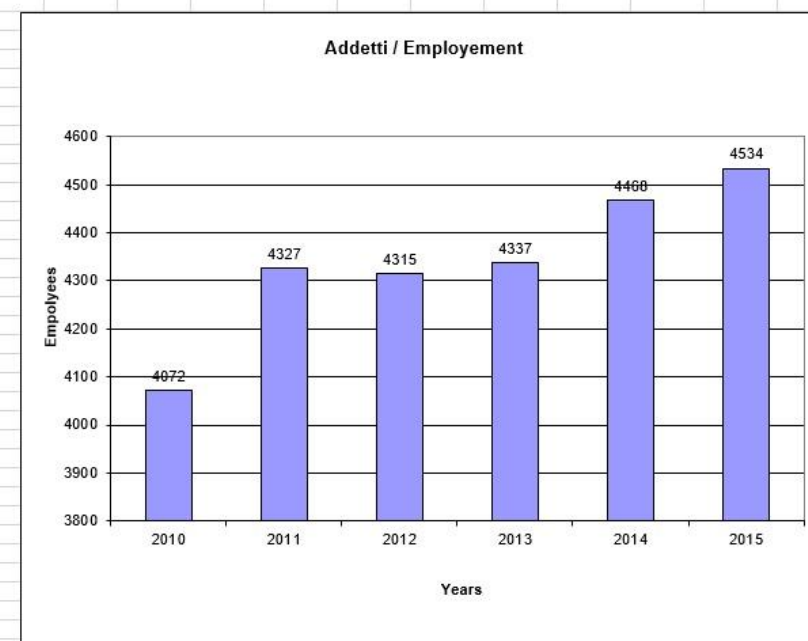
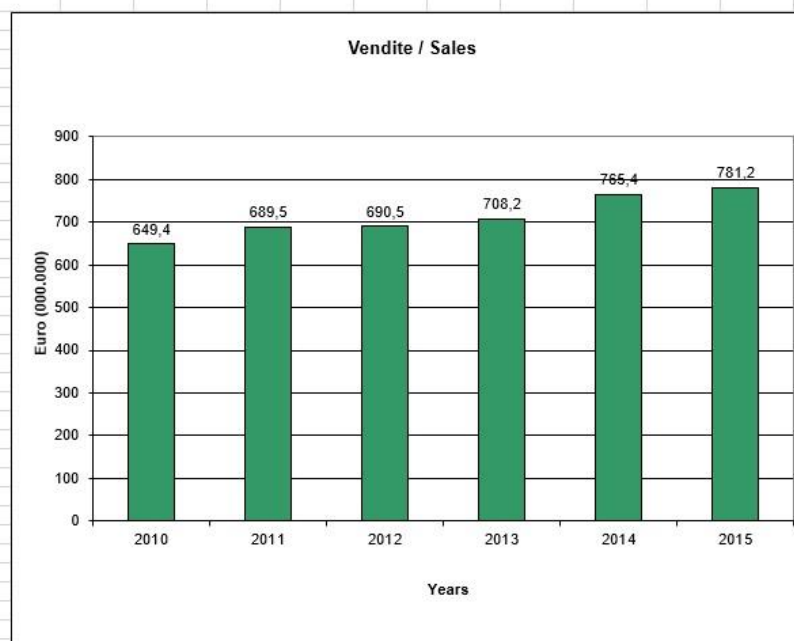
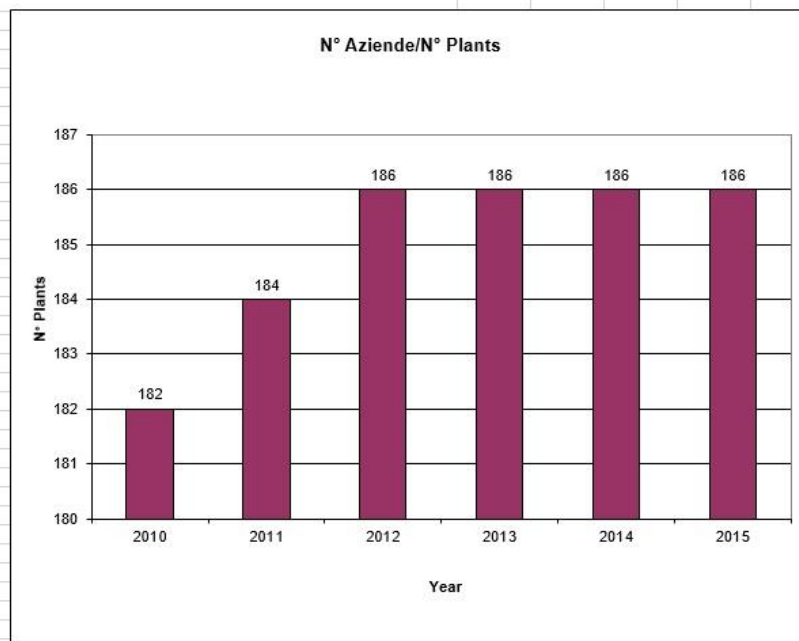
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SPRING INDUSTRY



Valori delle vendite espressi in Milioni di Euro - Value of sales in Million of Euros	2010	2011	2012	2013	2014	2015
						Previsioni Forecast
MOLLIFICI CON LAVORAZIONI A FREDDO - Cold coiled springs						
Fatturato/Turnover >10,00 Mln di Euro						
N° Aziende/N° Plants	11	14	13	13	15	16
Vendite/Sales (Euro 000.000)	277,50	319,50	318,80	328,30	378,06	395,65
Addetti/Employment	1513	1667	1570	1535	1679	1750
Vendite/Addetto - Sales/Employee (Euro 000)	183,41	191,66	203,06	213,88	225,17	226,08
Fatturato/Turnover > 6,00 Mln di Euro						
N° Aziende/N° Plants	12	12	11	10	12	13
Vendite/Sales (Euro 000.000)	93,91	101,00	79,50	80,50	91,77	95,66
Addetti/Employment	603	626	608	581	633	693
Vendite/Addetto - Sales/Employee (Euro 000)	155,74	161,34	130,76	138,55	144,97	138,04
Fatturato/Turnover > 3,00 Mln di Euro						
N° Aziende/N° Plants	23	24	25	26	28	27
Vendite/Sales (Euro 000.000)	100,47	103,80	107,00	102,40	120,75	114,13
Addetti/Employment	725	729	755	729	856	815
Vendite/Addetto - Sales/Employee (Euro 000)	138,58	142,39	141,72	140,47	141,07	140,03
Fatturato/Turnover > 1,00 Mln di Euro						
N° Aziende/N° Plants	45	41	41	39	42	43
Vendite/Sales (Euro 000.000)	79,05	76,50	68,70	68,70	72,13	72,55
Addetti/Employment	555	465	542	560	573	563
Vendite/Addetto - Sales/Employee (Euro 000)	142,43	164,52	126,75	122,68	125,89	128,86
Fatturato/Turnover < 1,00 Mln di Euro						
N° Aziende/N° Plants	90	92	95	97	88	86
Vendite/Sales (Euro 000.000)	65,00	70,00	72,50	67,00	55,72	54,96
Addetti/Employment	500	570	580	560	464	448
Vendite/Addetto - Sales/Employee (Euro 000)	130,00	122,81	125,00	119,64	120,09	122,67
TOTALE LAVORAZIONE A FREDDO - Total cold coiled springs						
N° Aziende/N° Plants	181	183	185	185	185	185
Vendite/Sales (Euro 000.000)	615,93	670,80	646,50	662,20	718,44	732,94
Addetti/Employment	3896	4057	4055	4077	4205	4269
Vendite/Addetto - Sales/Employee (Euro 000)	158,09	165,34	159,43	162,42	170,85	171,69
MOLLIFICI CON LAVORAZIONI A CALDO - Hot coiled springs						
N° Aziende/N° Plants	1	1	1	1	1	1
Vendite/Sales (Euro 000.000)	44,90	46,50	45,00	46,00	47,00	48,30
Addetti/Employment	270	270	260	260	263	265
Vendite/Addetto - Sales/Employee (Euro 000)	166,30	172,22	173,08	176,92	178,71	182,26
TOTALE LAVORAZIONI A FREDDO E CALDO -Total cold and hot coiled springs						
N° Aziende/N° Plants	182	184	186	186	186	186
Vendite/Sales (Euro 000.000)	649,40	689,50	690,50	708,20	765,435	781,243
Addetti/Employment	4072	4327	4315	4337	4468	4534
Vendite/Addetto - Sales/Employee (Euro 000)	159,48	159,35	160,02	163,29	171,31	172,31

SPRING INDUSTRY



Federico Visentin



EVOLUTION OF SPRING MARKET

The backlog appears to be improving slightly, with exception for a few sectors, always remains in the short term.

The automotive market, which in first half it seemed to grow, at the reopening of the factories in September shows a sudden slowdown

The level of employment in the sector of spring factories is basically stable with a slightly increasing trend.

Salaries have increased approximately 3% for labour agreements.

Safety levels within the spring factories are good.

The springmakers industry has the lowest incidence of injuries compared to the other engineering sectors

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TRENDS ON SPRING MATERIALS

Prices of raw materials overall is stable.

Anyway the delivery times are lengthening.

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ANCCEM EVENTS

6 November: ANCCEM national conference - Theme of the conference:

“Internal relations and contract renewal”

26 November: Training course for ANCCEM members about Grinding Process

ANCCEM NEWS

November 2015:

First edition of the Guidelines for Security for springmakers companies.

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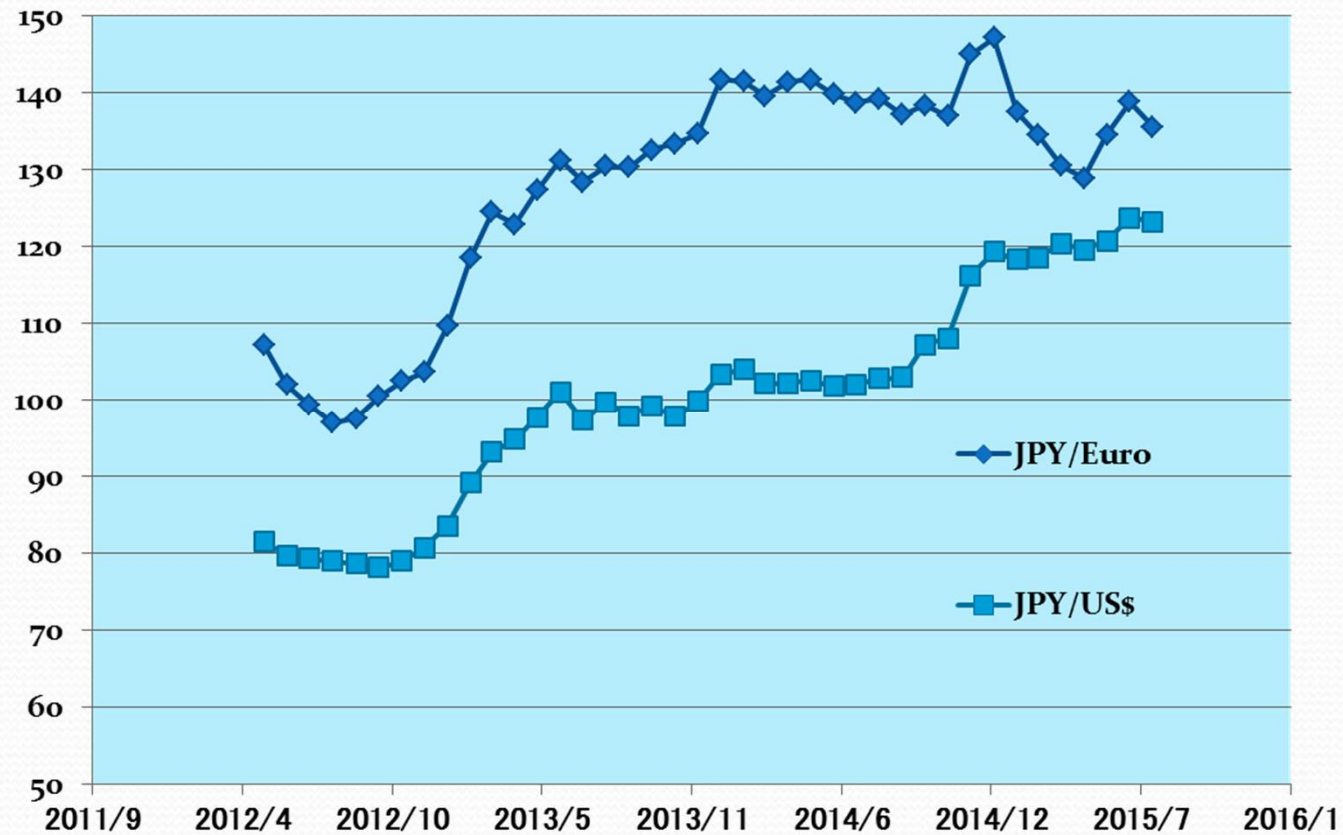
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Thanks for
your attention

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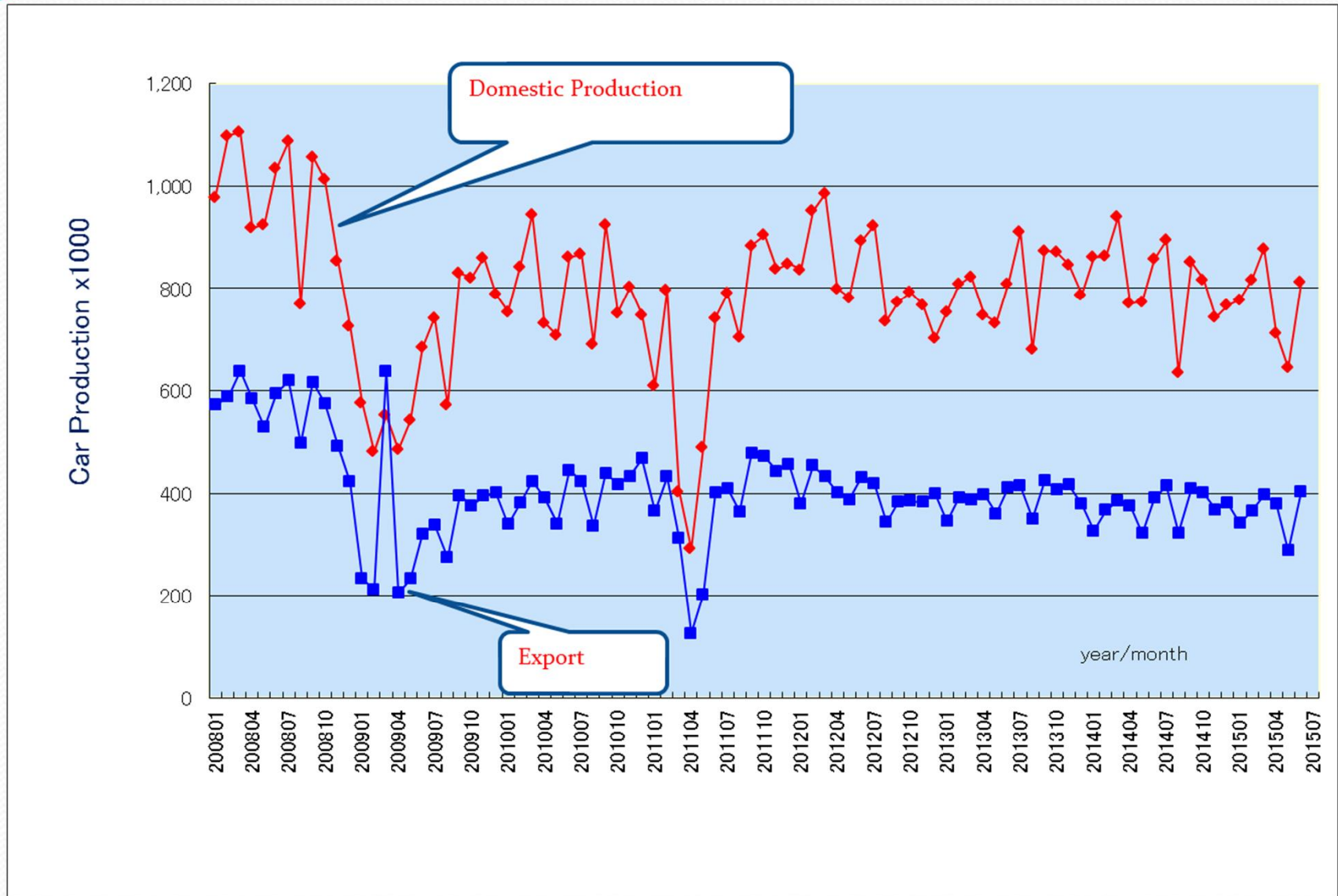
The Economic situation of The Spring Industry in Japan



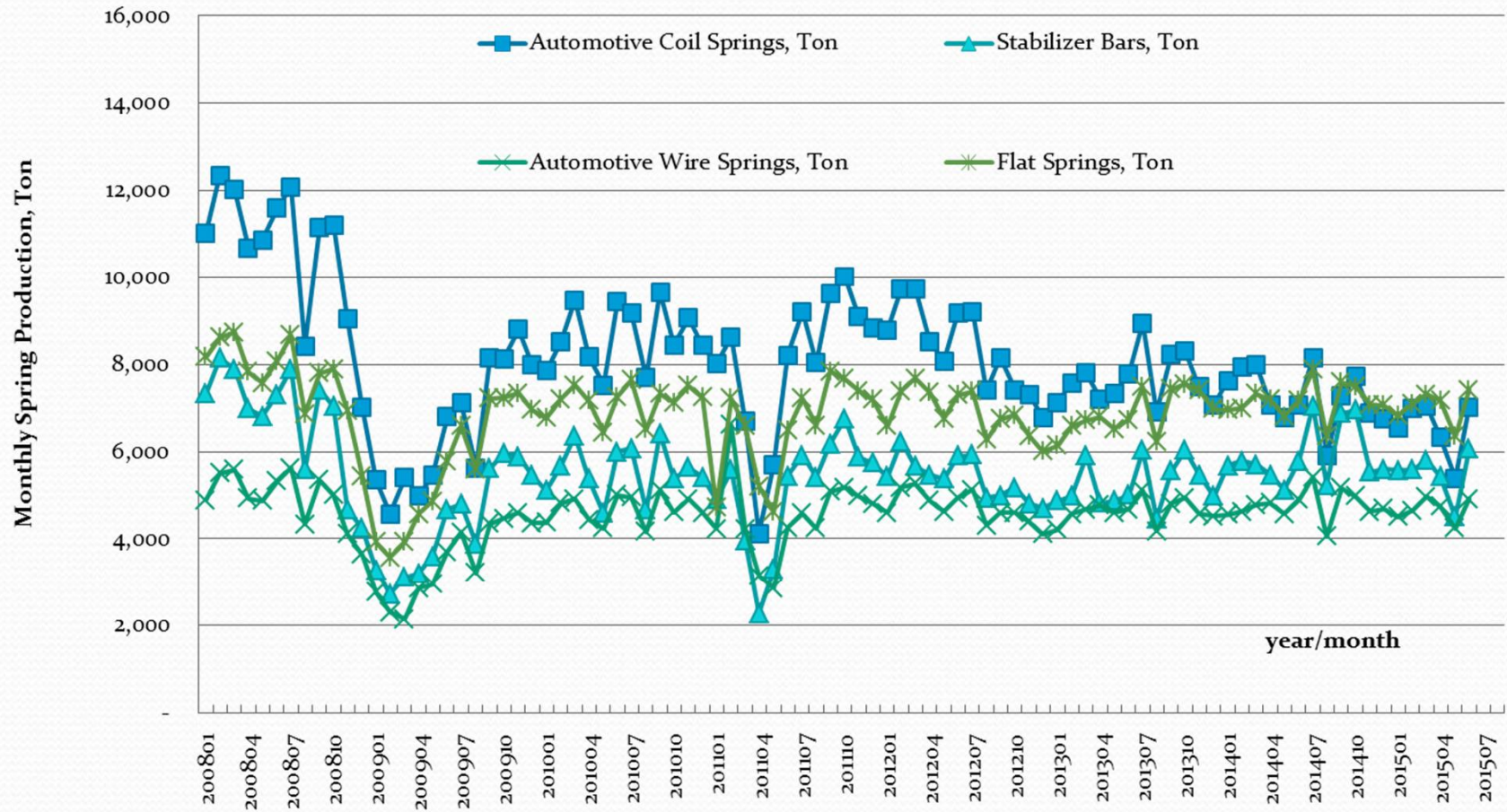
Kanji INOUE (kanjiinoue@spring.or.jp)
Japan Spring Manufacturers Association(JSMA)

International Spring Makers Congress Prague2015

Monthly Car Production and Export



Monthly Production of Springs



Recent Movements of Automotive and Spring Productions

		2007	2011	2014
Automotive Productions (Number of vehicles, Million)	Domestic	11.6 (1)	8.4 (0.72)	9.8 (0.84)
	Overseas	11.9 (1)	13.4 (1.13)	17.5 (1.47)
	Total	23.5 (1)	21.8 (0.93)	27.3 (1.16)
Spring Productions (Turnovers, Billion US\$ based 1US\$=100JPY)	Domestic	3.75 (1)	3.01 (0.80)	3.08 (0.82)
	Overseas	2.05 (1)	2.25 (1.10)	3.29 (1.60)
	Total	5.80 (1)	5.26 (0.91)	6.37 (1.10)

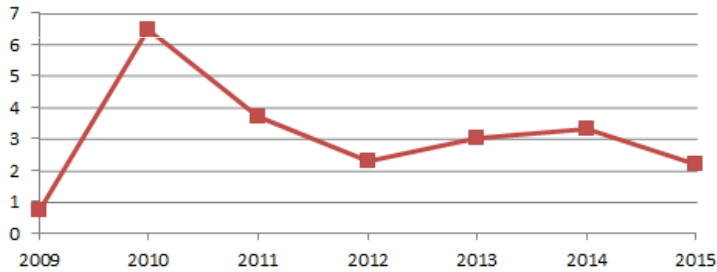
Remark: The peak of Domestic(Japanese) Automotive Productions was 13.49Million in 1990

SUMMARY

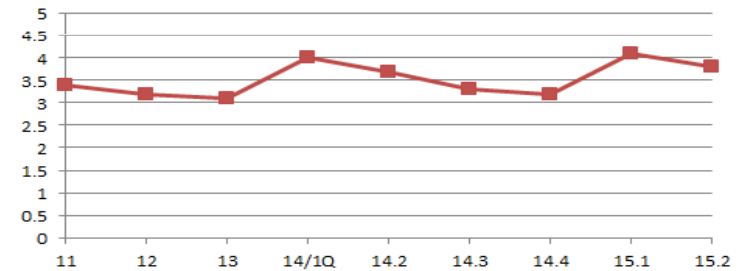
- ▶ **As a turning point of December 2012, the over-estimated Japanese Yen value changed to a certain value(1Euro=105 to 140 JPY, 1US\$=80 to 120 JPY) , to increase the world competitiveness of Japanese Automotive Industries.**
- ▶ **However, Spring production volume has not been increased so much. The main reason is that the domestic automotive productions decreased from 11.6 million in 2007, to 9.8million in 2014, while the overseas productions increased from 11.9 million in 2007 to 17.5million in 2014.**
- ▶ **The another reason should be that following to Automotive Industries, Japanese Spring industries have transferred some productions to Asian countries under the over-estimated JPY conditions around 2012 and 2013.**
- ▶ **Consequently, the domestic spring productions decreased from 3.75 billion US\$ in 2007 to 3.08billion US\$ in 2014(18% decrease). However, since the overseas productions increased from 2.05 billion US\$ in 2007 to 3.29 billion US\$ in 2014, the total increased from 5.8 billion US\$ to 6.37 billion US\$ in 2014(10% increase).**

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Korea

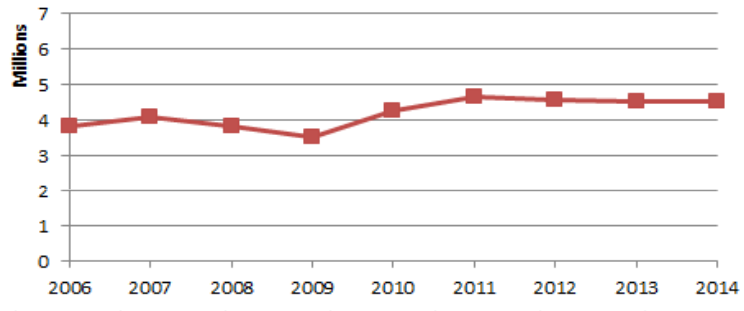
Economic growth



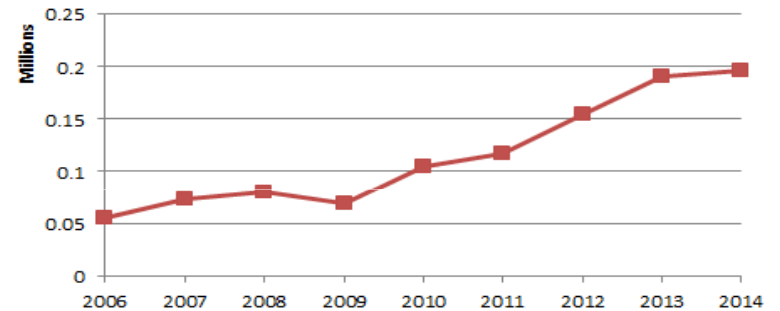
Unemployment



Vehicle production



Imported vehicle

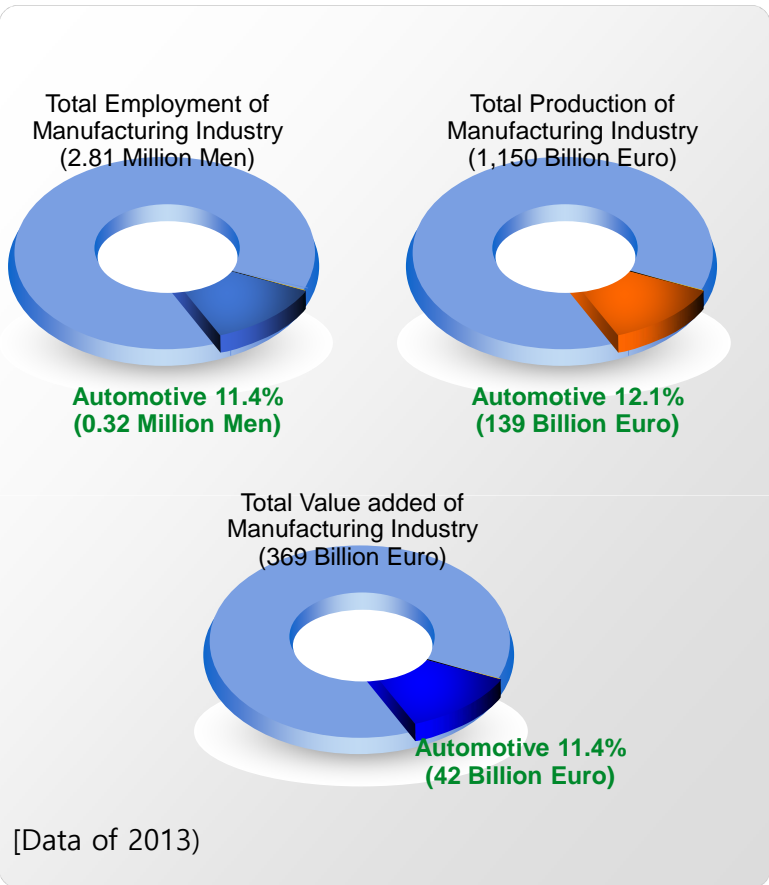


Monthly Production Record(Compare last year)

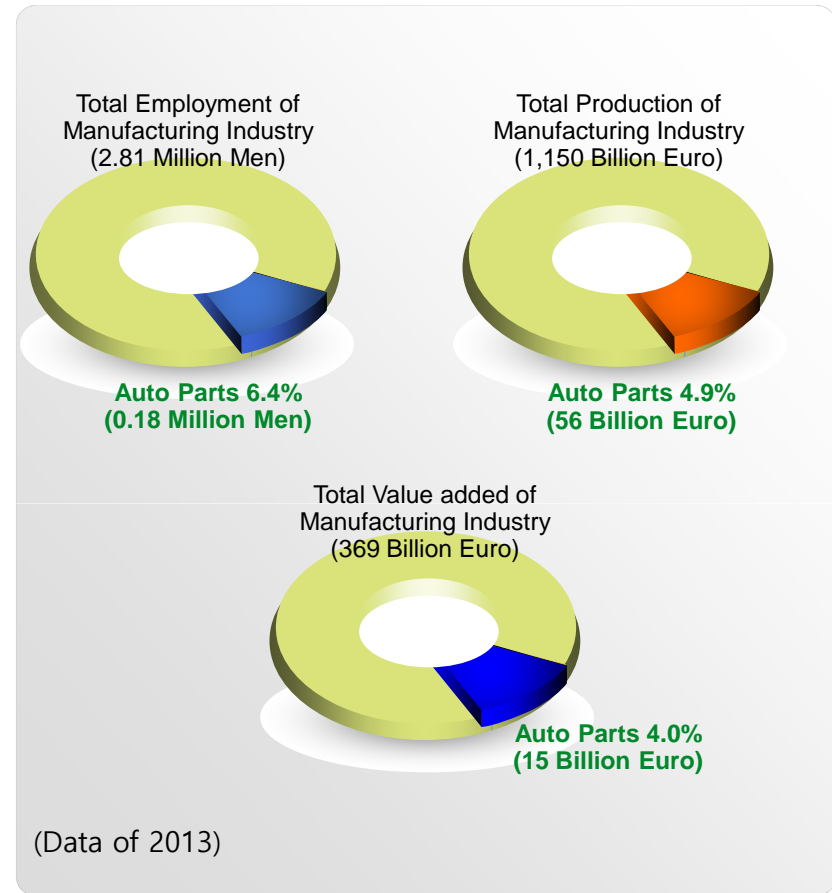


THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Korea

Automotive Industry



Auto parts Industry



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Korea

Total Sales Volume in Korea Auto Parts Industry

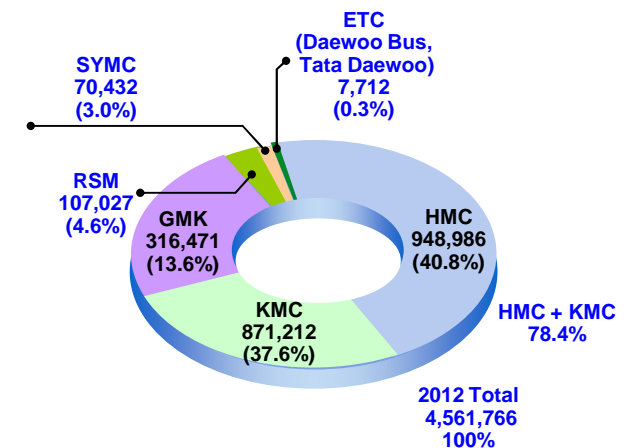
(Unit : Million Euro)

Year	2013	2014(B)	2015 Outlook(A)	Rate(A/B,%)
Sales Volume	57,562	59,004	59,692	1.2
OEM	39,027	39,999	40,385	1.0
A / S	2,342	2,400	2,423	1.0
Export	16,193	16,604	16,885	1.7

Result & Outlook of Spring Industry(Automotive)

(Unit : Million Euro)

Year	2013	2014(B)	2015 Outlook(A)	Rate(A/B,%)
Spring Industry	770.0	747.0	750.0	0.4
Daewon	616.1	597.6	599.3	0.3



(The first half of this year 2015)

Spring Industry information

Year	Spring company	Employee	Turnover
Daewon	About 20 company (More than 10 Mil.)	3000(est.)	9500(est.)

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Switzerland

Situation of the Swiss economy – EUR/CHF exchange rate



COMMENT

- The export industry and tourism is feeling the impact dramatically
- Original growth rate of the economy of 2,1% for 2015 and 2,4% in 2016 has been reviewed => recession is expected for the first half of 2015
- Unemployment rate will raise, export oriented companies will shift production abroad
- The export oriented spring makers will have an important negative impact onto turnover and profitability



Notes

Source: Financen.ch

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Switzerland

- **General measures:**
 - Careful evaluation of investments
 - Increasing monthly working hours (+5 %)
 - Reducing of overhead cost (marketing, IT,...)
 - Optimisation of purchasing portfolio
 - Reduction of employees
- **Structural measures:**
 - Review product portfolio
 - Shifting of production capacities abroad
 - Increased lean-management approach
 - Adjustment of organisational structure (lean overhead)

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN Switzerland

- **Number of spring makers in Switzerland**

Very fragmented, usually Small and Medium Enterprises, mostly family owned business, estimated numbers of springs makers => 30 SMEs (not included potential spring makers for the watch industry), 1 bigger one with BAUMANN

- **Number of employees**

Average numbers of employees => 50 for SMEs, 450 for BAUMANN
Total number of employees => 2'000

- **Total turnover of spring makers**

Average turnover per company => EUR 15 Mio
Total turnover => EUR 700 Mio (including BAUMANN)

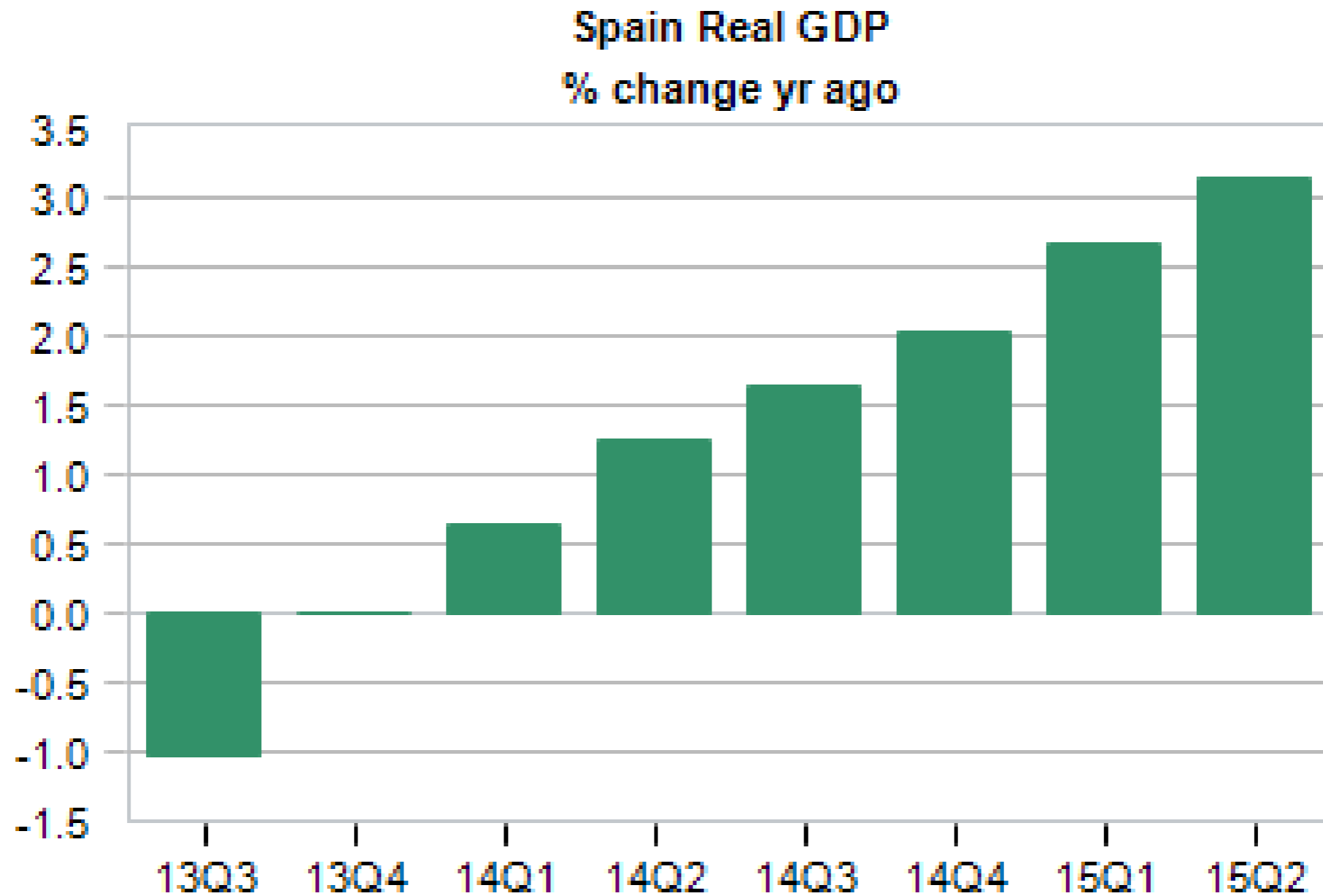
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN

- 1. Market situation.**
 - **Recent evolution on the spring market and in the main customer segments**
 - **Situation and trends for the spring materials supply.**
 - **General business environment**
- 2. Employment**
- 3. The spring industry**
- 4. Springs Industry challenges**
- 5. Special events and News from the National Association**

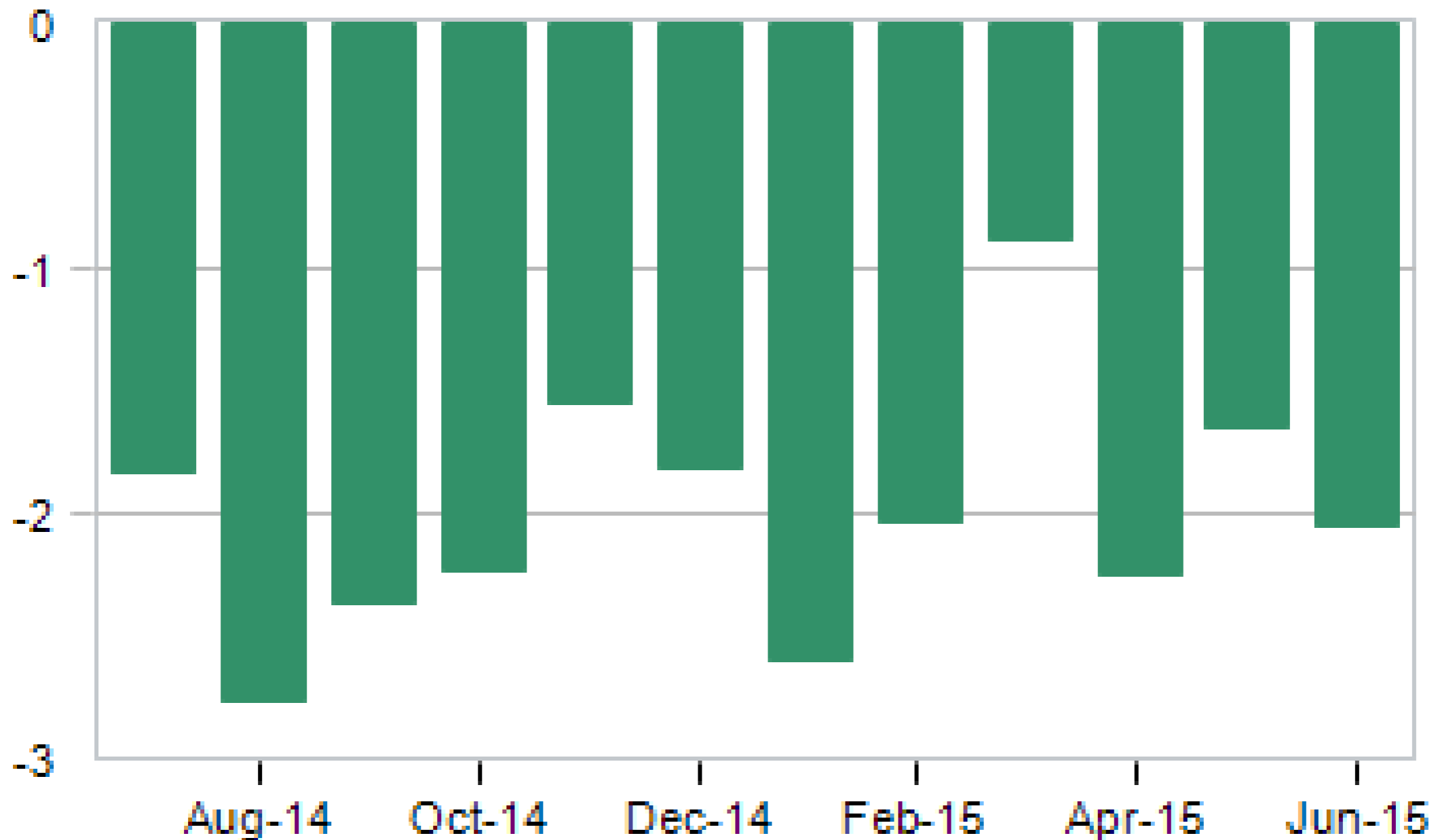
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN

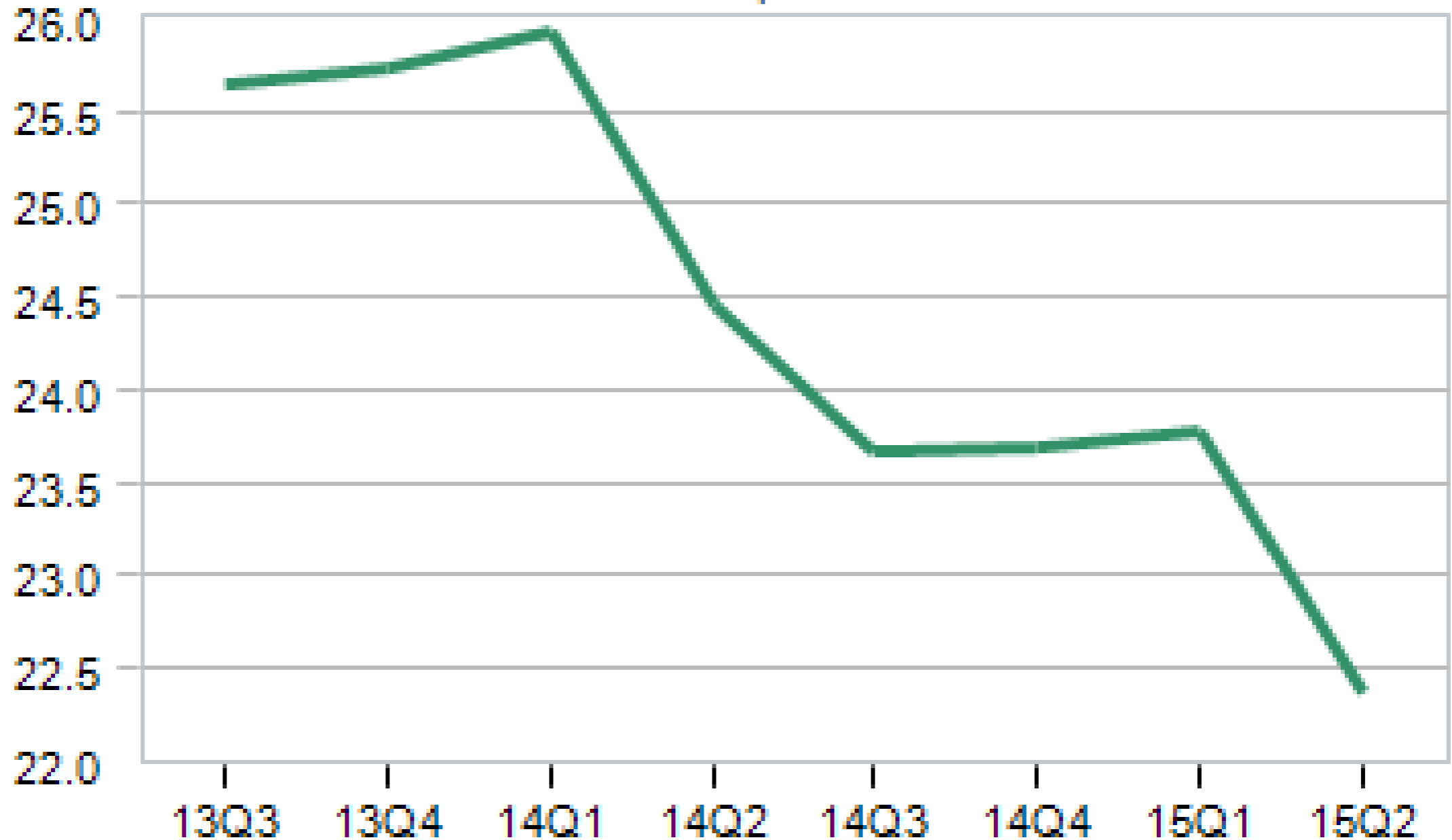
Spain Merchandise Trade Balance

€ bil



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN

Spain Unemployment Rate
%, NSA



THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN

How many spring manufacturers do you have in your country?

114 manufacturers (18 of them associated to ASEMU)

How many people work there?

Around 950 people

What's the total turnover of all spring manufacturers in your country (you could for an estimate).

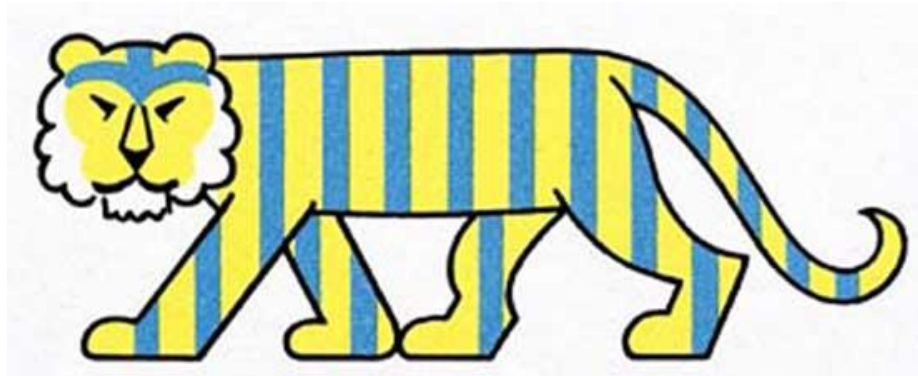
Roughly 117 million €

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN SPAIN

Thank you very much.

Do you have any
question?

The Spring Industry in Sweden



The Swedish Spring Industry, in numbers...

15 Spring manufacturers in the country, **10** major

The industry employs **700**

Total turnover (operating income) for the industry 2014 **1.282.491.000 SeKd**

*'The swedish spring industry is highly consolidated,
with few actors and a limited market.*

*Though stabile for the time being - it is generally considered that the
spring market is shrinking over time due to the change of focus in the
Swedish industry.'*



The Economic Situation in Scandinavia

THE FINAL PRODUCT

GERMANICVM

MARE

Vulgo *De*

Noord See.

MARE

BALTICVM

Vulgo *De* *Oost See.*

Scala miliarium.

Altera Italia	0 10 20 30 40 50 60 70 80 90 100
Belgica	0 10 20 30 40 50 60 70 80 90 100
Germania Septentrionalis	0 10 20 30 40 50 60 70 80 90 100
Germania Meridionalis	0 10 20 30 40 50 60 70 80 90 100
Francia	0 10 20 30 40 50 60 70 80 90 100
Anglia	0 10 20 30 40 50 60 70 80 90 100
Scythia	0 10 20 30 40 50 60 70 80 90 100
India	0 10 20 30 40 50 60 70 80 90 100

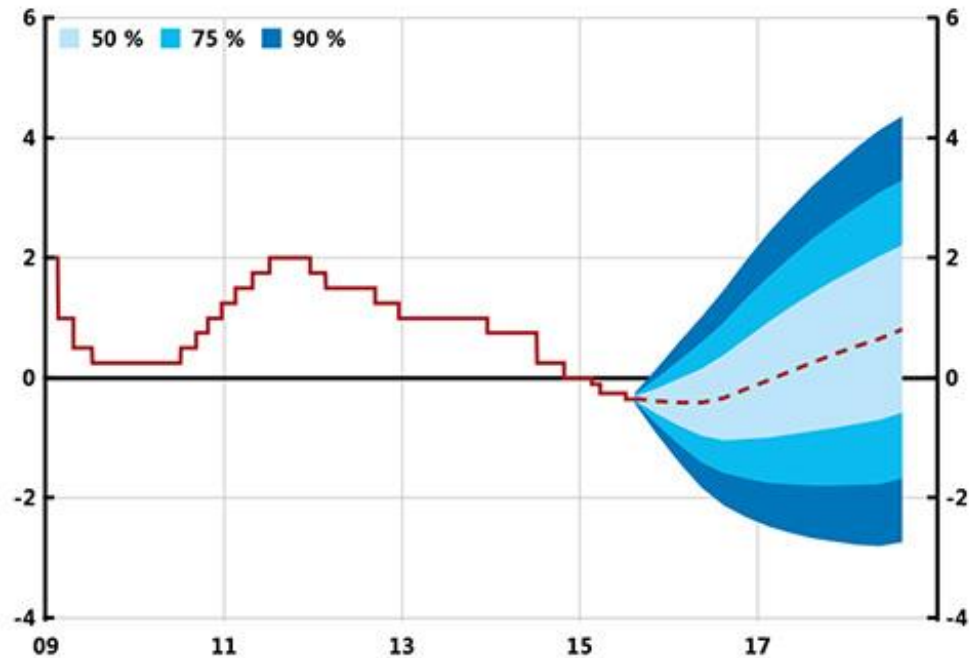
The economic situation in Scandinavia

The state of the Swedish market

The Swedish market is getting stronger and there is a trend of a rising inflation. This will remain despite the current insecurity in the world according to the **Riksbanken**. (Sweden's National Bank)

The negative Repo-rent remains unchanged at **-0,35%**.

(Next meeting for setting the Repo-rent is planned to 27th of October)



The economic situation in Scandinavia

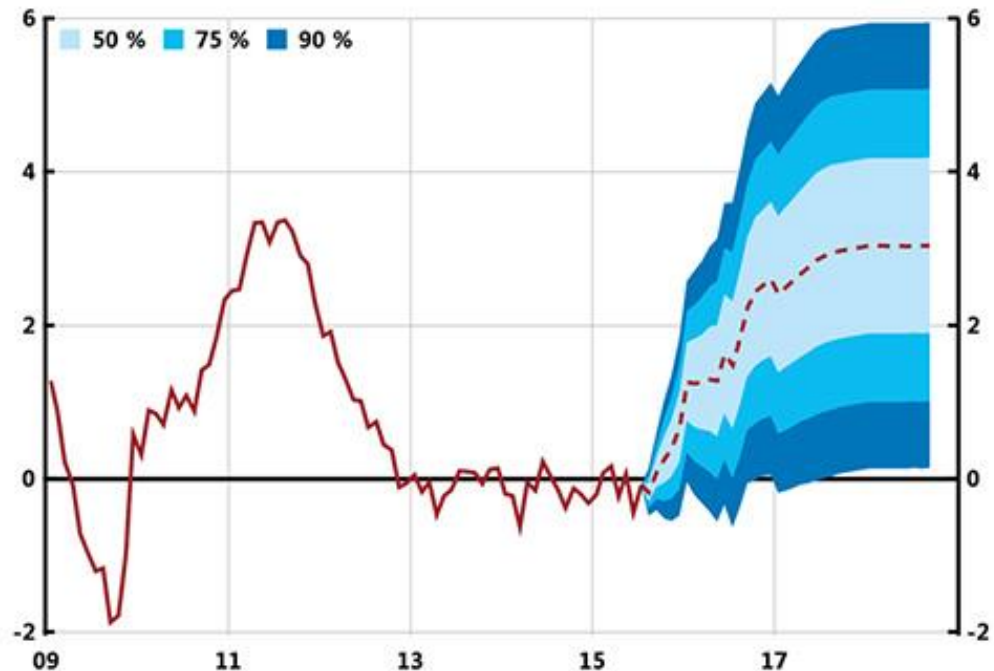
The Swedish inflation

There's a current trend showing the inflation rising **since 2014**. In July it was closer to **0,9%**.

(energy sector excluded at **1,5%**)

This trend is expected to continue despite lower cost of oil and electricity, because of the low Repo-rent, stronger state of the market and a weaker Krona.

It is expected from **Riksbanken** that during **2016** the inflation will rise closer to **2%**.



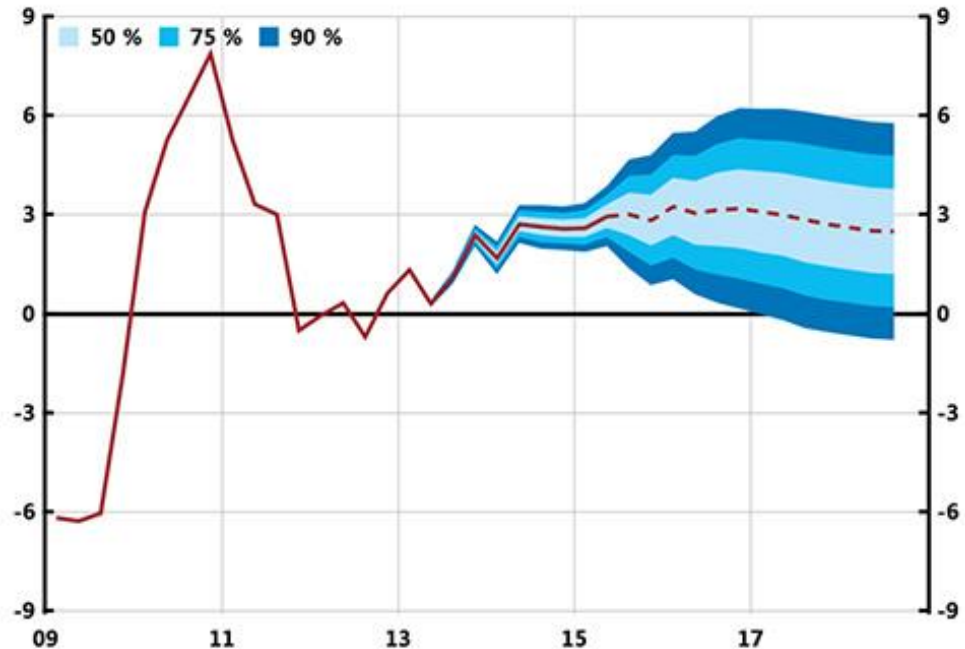
The economic situation in Scandinavia

The Swedish GDP

The GDP growth in Swedish economy has been rather good, despite a weaker international demand.

It has been domestic driven of local demand and strong consumption. There was also a lot of investments in building and property.

Future expectation is for a wider demand, and a higher international demand will have a positive effect on Swedish exports. This will push for further investments.



*(Source for figures and statistics has been supplied from RIKSBANKEN
- the Swedish National Bank)*

The economic situation in the Nordic countries

Short comment on the Norwegian economy

Norway is one of the wealthiest countries in the world, and used to have a GDP of **+60%** the mean of other European countries. Annual growth has been approximately **3%** over time.

50% of the Norwegian economy is **Oil and Gas**, the **Service sector** (including Civil) counts for **26%**, whereas the **Industry sector** is only a mere **8,5%**.

With an unemployment rate of 2,5% the lack of workforce has been pushing the cost of labour to an increase of over +30% compared to their closest market competitors during the years.

But as for now the oil price has fallen some 60% within half a year!

With their National Oil Fund (of some 6400 billion NoK) Norway will now have to take actions in order to alter their economy to be based on other than the Oil and Gas. According to Vidar Helgeson (Norway's Minister of European affairs) the oil will not be the motor in their future economy.

Instead Norway will focus on developing technology and supplying engineering to the Energy sector, as well as refining their fishing industry.

This year it is expected that the Norwegian oil industry will lay off 1000s of employees, and its investments will decrease with 15-20%.

Prague September 2015

8th International Congress of The Spring Industry

UK Spring Companies

- ▶ The UKSMA is no longer a member of the ESF so William Hughes Ltd and my own company have become associate members.
- ▶ Goss Springs Ltd
- ▶ Located in Essex, North East of London at the end of the Underground railway Central Line at Epping
- ▶ Previously in Walthamstow East London until 2013
- ▶ The need for housing in the London area increased pressure to move industry away from the housing
- ▶ Eventually the land was needed to meet the housing shortage although it had been an industrial area since 1910
- ▶ Currently occupy 3,800 Sq. Metres
- ▶ Employ 60 people
- ▶ Turnover £2.8 Million €3.8
- ▶ Export approximately 30% worldwide

Goss Springs

- ▶ Current production range
- ▶ Wire springs and wire shapes from 0.10mm diameter up to 8.0mm
- ▶ Flat metal and spring presswork
- ▶ Conventional power presses up to 250 Tons
- ▶ Multi-slide production up to 35 tons on press station

UK Spring Industry

- ▶ It is quite difficult to accurately report the size of the UK Spring industry because to the annual reporting requirements for company accounts
- ▶ Small companies can submit abbreviated accounts to companies house if
- ▶ Turnover less than £6.5M €8.8M
- ▶ Balance sheet less than 3.26M €4.4M
- ▶ Less than 50 employees
- ▶ Below this level they do not have to declare their Profit and Loss account just a balance sheet
- ▶ Once they have exceeded 2 of the 3 conditions they must submit audited accounts which will give the turnover and number of employees

UK Spring Industry

- ▶ The UKSMA
- ▶ Member companies 76
- ▶ Employing 1800
- ▶ Turnover 180-200 M£
- ▶ Export turnover for the industry as a whole is impossible to establish
- ▶ Although in an independent survey report they list 108 spring Makers

UK Economy

- ▶ Again its difficult to establish complete figures as these are reported at different times and in different ways
- ▶ Employment 2013 2014 2015 Expected
- ▶ Manufacturing 2.554M 2.595m 2.604m
- ▶ Rest 32.268M 33.345M 33.823M
- ▶ Unemployment 7.5% 6.1% 5.49%
- ▶ Numbers employed can be skewed by employees with Zero hours contracts and multiple jobs
- ▶ Latest unemployment figure are 1.82M

UK Economy

- ▶ Manufacturing industry changed in the late 90's with the move of companies to last cost areas in the world.
- ▶ There has been a gradual move back to the UK for the producers of small quantity, high value, specialist products
- ▶ Although the economy is growing it would appear to be primarily in the service sector.
- ▶ The balance of payments is still running in negative figures
- ▶ Services between +6-8 Billion /month
- ▶ Goods between - 8-11 Billion /month
- ▶ GDP per person is not easy to establish
- ▶ GDP increased 2.8% in 2014 and is expected to increase by 2.6% in 2015

UK Economy

- ▶ The economy grew in 2014 but has slowed in the first half of 2015
- ▶ This may be a reflection of the strength of the £ against the € and \$
- ▶ Export strength is apparently in motor vehicles and electrical products.
- ▶ Levels of the increase in economic activity vary across the various regions of the country with London and the South East and the North benefiting.
- ▶ Inflation is running at around 1% but this may be disguised by the low oil price

UK Economy

- ▶ There is a increase in the housing sector as the need to house more people increases but we are still only building 130/140,000 a year which is lower than the net increase in population, but there is a shortage of available land and funding to increase this substantially
- ▶ The increase in the retirement age has added a burden to employers as most people are unable to retire as they have insufficient pension funds to keep them in a reasonable standard of living.
- ▶ This creates further problems with the employment of young people as after training there isn't a job for them until someone retires

UK Economy

- ▶ Industry is facing a large skills shortage
- ▶ Training was cut back 10/15 years ago when mass employment was moved offshore.
- ▶ All sectors of employment are experiencing the problem as the focus of our education system was moved away from skill and trade crafts towards higher education, with education focusing on the service sector but there hasn't been the growth in jobs in these areas.
- ▶ If manufacturing is to survive in the long term we need to change the emphasis back to education in trade manufacturing and production

UK Economy

- ▶ The national minimum wage will be increased in October to £6.70/Hour €9.112
- ▶ In October 2016 it will increase to £7.20/Hour €9.792
- ▶ With a commitment to 2020 of £9.00/hour €12.24
- ▶ 34 % increase over 5 years
- ▶ The current government is committed to a referendum on our membership of the EU and the recent change in the political Bias of the labour party to the far left will add to uncertainty.

THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN THE United States of America



US Precision Spring Industry

- 288 spring companies in US - down from 331 in 2010
- 11,600 employees in US - down from 12,200 in 2010
- About \$2.97 Billion in Annual Sales - up from \$2.65 Billion in 2010
- Average Sales / Company is \$10.3 Million – up from \$8 Million in 2010
- The number of Companies & Employees has dropped the past 4 years
- Industry Sales & Sales / Company have increased the past 4 years
- These changes are a result of ongoing Industry Consolidation in the US

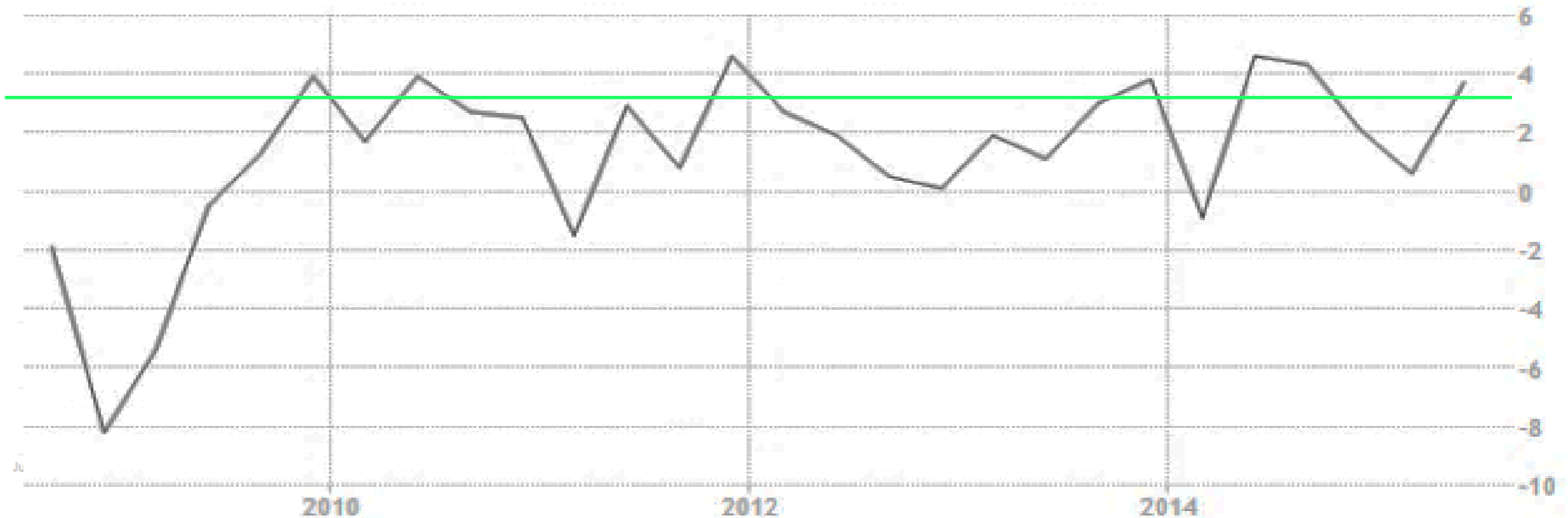
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN THE United States of America



US Gross Domestic Product Change Rate (%)

June 2008 – June 2015

- Long Term Average = 3.25% & 2nd Quarter GDP rebounded to 3.7%
- Uneven GDP growth rate make long term business planning difficult
- Uncertain future leads to continued below trend growth expectations



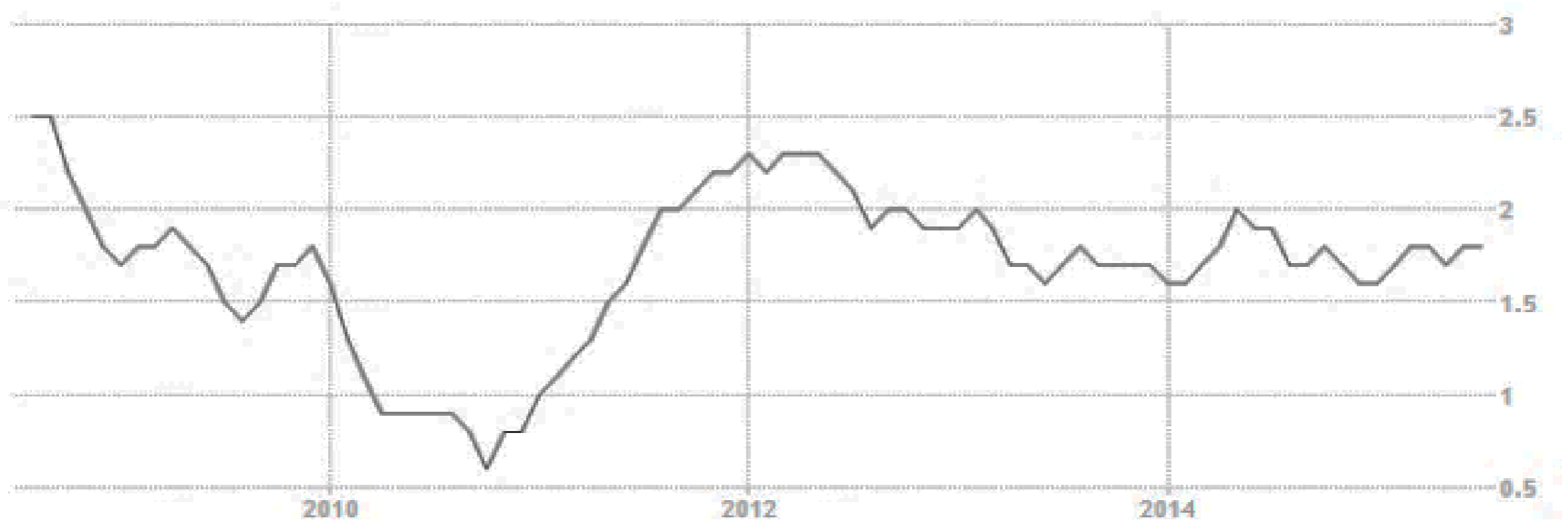
THE ECONOMIC SITUATION OF THE SPRING INDUSTRY IN THE United States of America



US Core Inflation Rate (%)

July 2008 – July 2015

- Long Term Average = 3.72% & July Core Inflation stable at 1.8%
- Inflation is well below LTA & still below Federal Reserve Target of 2%
- Expected to remain low - Strong US\$, Low energy & commodity prices



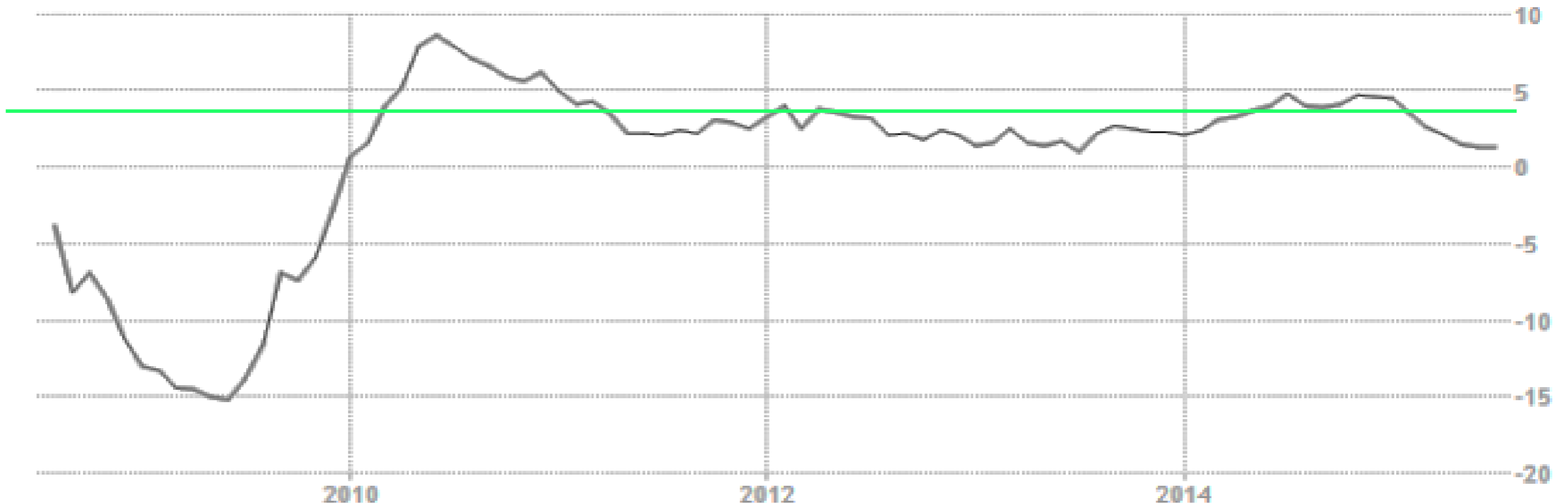
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US Industrial Production Growth Rate (%)

July 2008 – July 2015

- Long Term Average = 3.85% & July IP growth rate stable at 1.3%
- Growth rate dropped below LTA in 2015 - Strong \$, Weak global economy
- Suggests future Industrial Production growth is still marginal in US



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US Unemployment Rate

August 2008 – August 2015

- Long Term Average = 5.83% & August UE Rate was down to 5.1%
- UE Rate dropped below LTA in 2015 & continues to steadily improve
- Suggests more difficulty in finding quality workers of any skill level



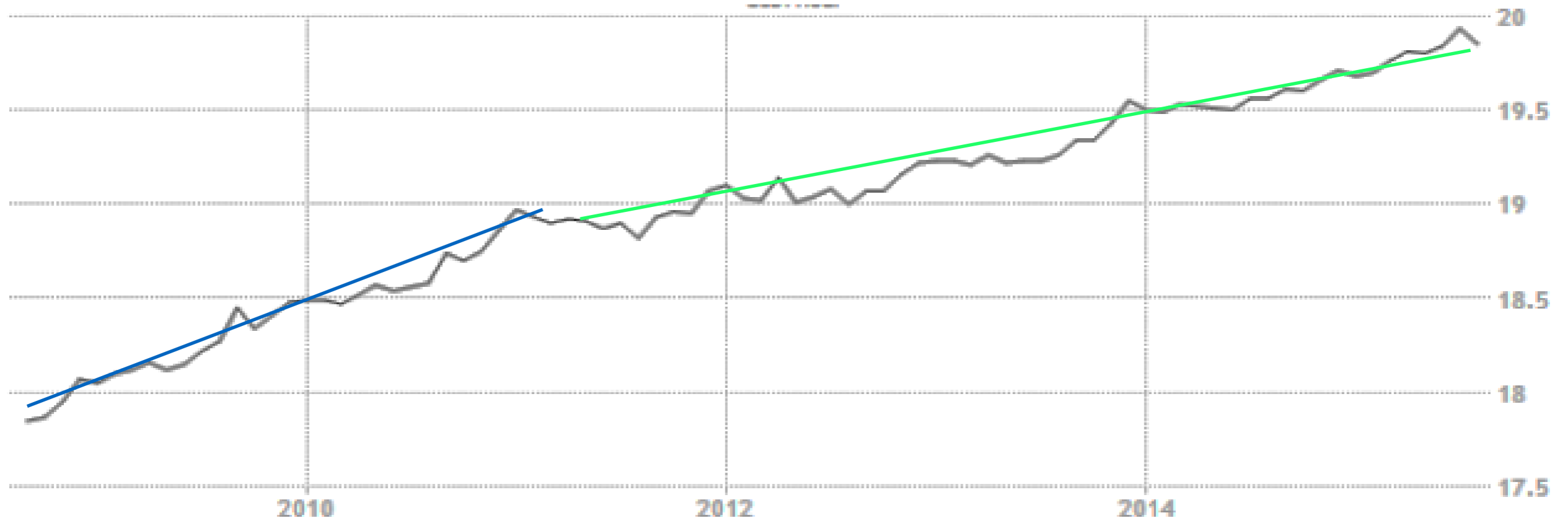
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US Average Hourly Manufacturing Wages (\$)

August 2008 – August 2015

- Wage Growth slightly slower these past 3 years (2.5% vs. 5.5%)
- As unemployment drops, wage rates are expected to rise more quickly
- Actually happening in certain tight regional labor markets now



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US Purchasing Managers Index

August 2008 – August 2015

- Long Term Average = 52.8 & August PMI fell to 51.1 (lowest since 5/13)
- Readings above 50 generally signal expansion
- Also suggests that future growth is at risk & will be muted at best



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US Spring Industry Performance 2014 vs. 2013

- Annual Spring Industry Survey Results show negative trends 2013 to 2014:
- Average Profit Margin dropped about 15%
- Average Return on Net Worth dropped 20%
- Average Sales Growth Rate dropped 68% - from 4.7% to 1.5%
- Sales Growth Rate Varied Significantly depending on the Markets Served
- Some Markets were down significantly & others were up fairly strongly

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Current Strength of Various US Spring Markets

- Automotive still strong at a high level (17+MM SAAR)
- Heavy Truck is strong & still growing
- Appliance is strong & still growing
- Recreation is strong & still growing
- Aerospace is strong & still growing
- Medical is strong & still growing
- -----
- Government / Defense is flat – Budget constraints on spending
- Agriculture & Heavy Equipment are depressed - Weak commodity prices

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2015-2016 Outlook for the US Spring Industry

2nd Quarter Spring Maker Survey suggest stability with some slight growth:

- 55% said sales had increased vs. previous quarter & year
- 38% expect sales to increase more in the next 3 months
- 25% said sales had decreased vs. previous quarter & year
- 10% expect sales to decrease further in the next 3 months
- Outlook is dependent on the specific markets served, as mentioned earlier
- Overall Outlook is fairly positive with few expecting a drop in business

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Challenges Remain for the US Spring Industry

- The strong US\$ & soft global economy could hurt future exports & sales
- If Federal Reserve starts raising interest rates too fast it will be a problem
- Current Low Unemployment is making it very hard to find skilled people
- Current Low Unemployment is just starting to drive up Wage costs
- New government regulations are continuing to drive up Overhead costs
- These challenges are putting negative pressure on Profit Margins
- Finally, our US Economy starting 7th year of expansion & our normal economic cycle suggests a recession likely in the next 18 – 24 months