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# Grain prices and food crises in 14th century Flemish cities (1280-1370)

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*STEF ESPEEL*

ESSHC BELFAST – SESSION *SHOCK CITIES* (6 APRIL 2018)

# Introduction

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## Overview:

- Introduction
- Shock Cities
  - Character different case-studies
  - Sources
- Long term price movements
  - 1280-1370
  - General course
- Short term price movements
  - Focus on price peaks
- Concluding remarks

# Introduction

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- Vulnerability 14<sup>th</sup> century Flemish cities – no demographic decline?
- FAD vs. FED
  - > Co-production of food crises
- Malthusian Null-Hypothesis
- Focus: chronology of the price peaks and food crises



# Shock Cities

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- Character of hinterland
  - Peasant agriculture vs. agrarian specialisation
- Degree of political power
  - Inclusive regimes vs. patrician autocracy
  - Political autonomy vs. territorial lords
- Connection to international markets
  - International *gateway* vs. regional distribution

# Sources

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- Representative sample for the general population
- Account series
  - Caritative institutions: hospitals in particular
  - Collegial church chapters
  - Abbeys

# Sources – institutions

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- Bruges
  - Hospital Saint-John
  - Hospital Our Lady *ter Potterie*
  - Chapter Saint-Donatian
  - Memorial Simon de Rikelike
- Ghent
  - Chapter Saint-Nicolas
  - Chapter Saint-Veerle
  - Chapter Our-Lady-Saint-Peter
  - Abbey Saint-Peter
  - Abbey Saint-Bavo
- Lille
  - Hospital Saint-Sauveur
  - Chapter Saint-Peter
- Douai
  - Chapter Saint-Amé
  - Abbey *des Prés*
  - Hospital Wetz
- Cambrai
  - Metropolitan Chapter of Our Lady
  - Chapters Saint-Croix & Saint-Géry
  - Hospital Saint-Julian
  - Abbey Saint-Sépulchre

# Long term price movements

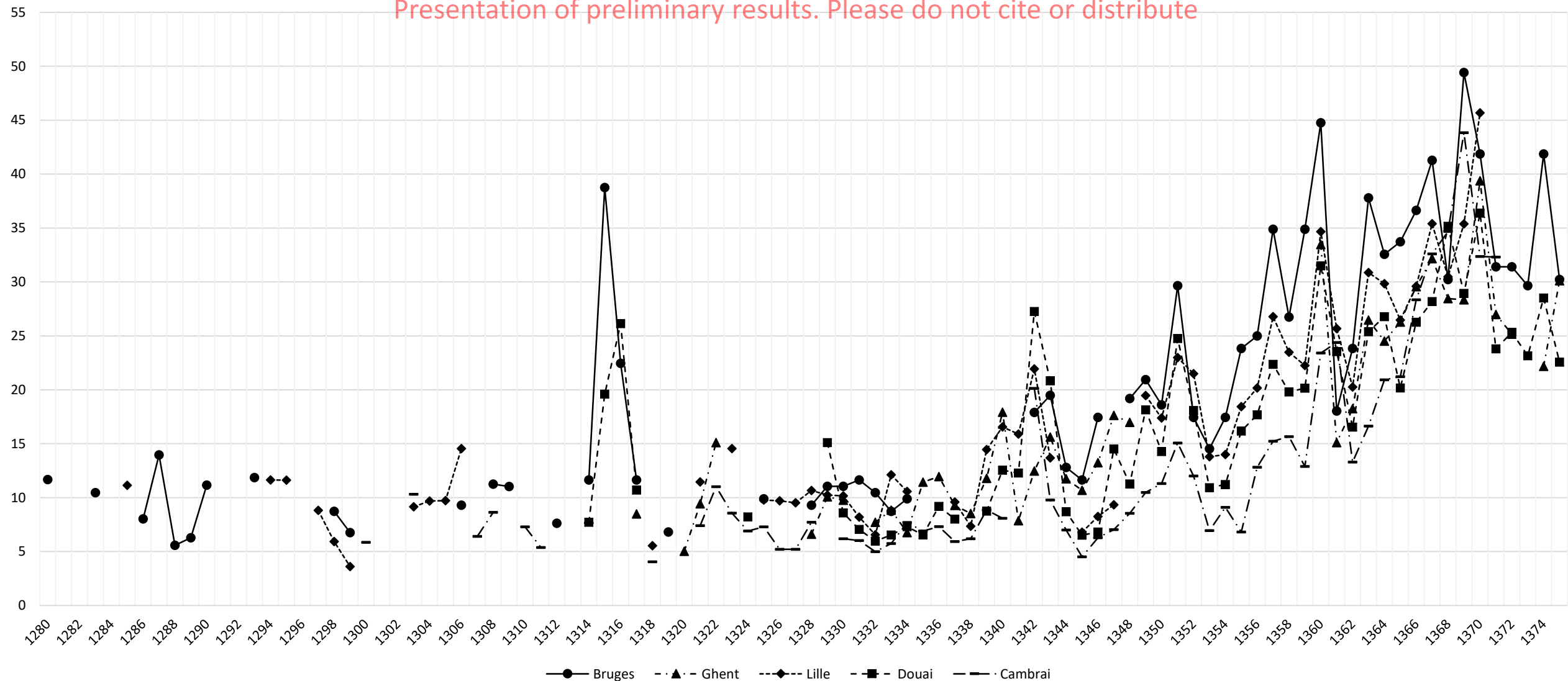
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- Differences in measures and coinage systems
  - All prices in: d.gr. (vl./torn.) / hectolitres
  - Long term inflation not excluded
- Comparing wheat prices
  - Insufficient data for all the other grain types
  - Main bread cereal
  - Other grain types usually followed this trend

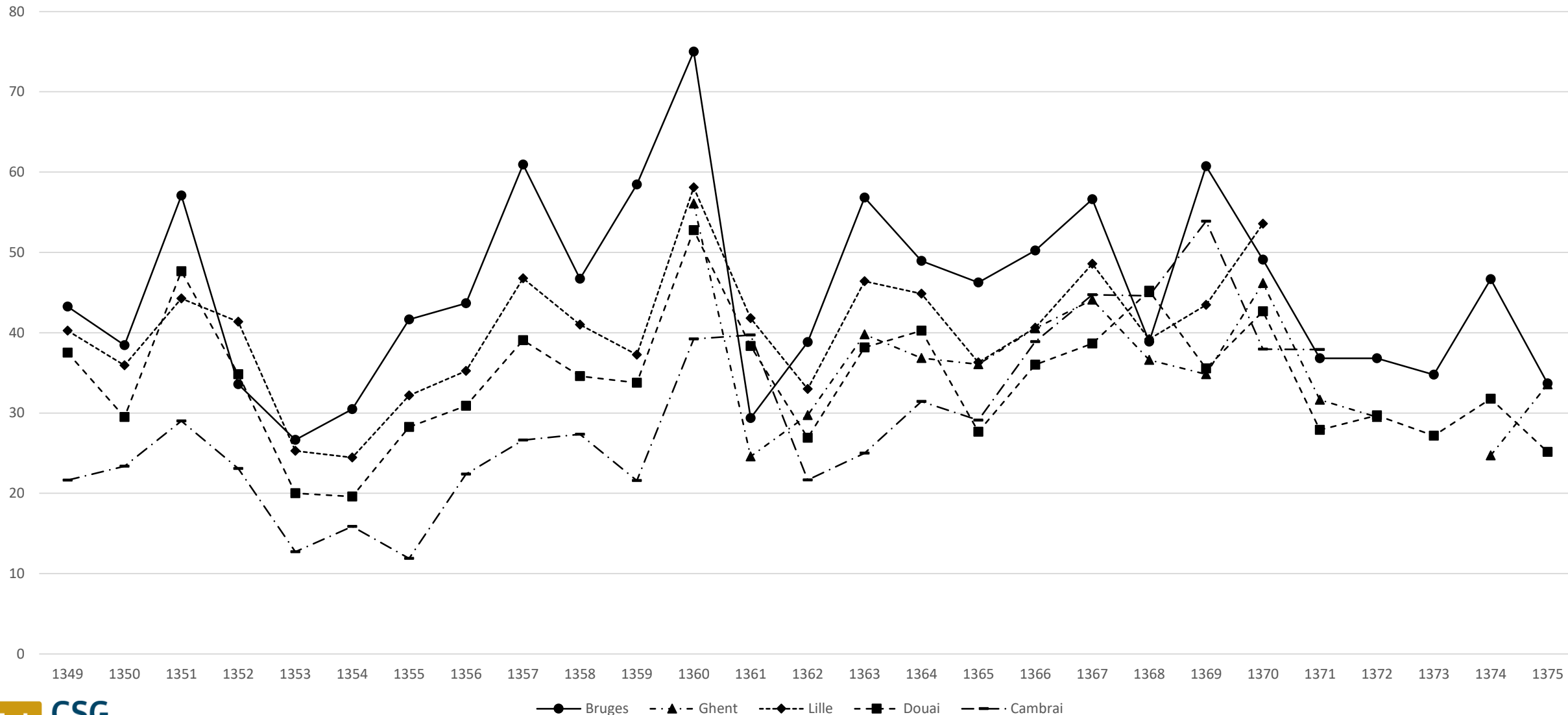


# Wheat price in Flemish cities, 1280-1375 (d.gr./hl.)

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Wheat price in Flemish cities, 1349-1375 (gr. silver/hl.)



# Average relative differences

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- First glance: same course of the five series
- Comparing the series: rows compared to columns
  - Results (%):

	<i>Bruges</i>	<i>Ghent</i>	<i>Lille</i>	<i>Douai</i>	<i>Cambrai</i>
<i>Bruges</i>	100,00				
<i>Ghent</i>	-26,75	100,00			
<i>Lille</i>	-19,83	4,09	100,00		
<i>Douai</i>	-37,02	-12,07	-15,46	100,00	
<i>Cambrai</i>	-74,32	-39,55	-50,35	-29,56	100,00

- Bruges highest overall (26,8% on Ghent and 19,8% on Lille etc.)
- Ghent and Lille followed closely, in favour for Lille (4,1% higher than Ghent)
- Douai lower and Cambrai lowest

# Correlation coefficient

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- Parallel course of wheat price series
- In what degree are series correlated to each other? Doesn't imply a causal relation!
  - Results:

	<i>Bruges</i>	<i>Ghent</i>	<i>Lille</i>	<i>Douai</i>	<i>Cambrai</i>
<i>Bruges</i>	1				
<i>Ghent</i>	0,926718	1			
<i>Lille</i>	0,916245	0,924648	1		
<i>Douai</i>	0,828163	0,863255	0,923455	1	
<i>Cambrai</i>	0,813699	0,841455	0,894194	0,870104	1

- Category ]0,9 – ]1:
  - Bruges – Ghent; Bruges – Lille; Ghent – Lille; Lille – Douai
- All relations above 0,81

# Short term price movements

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- Also only wheat prices -> most detailed
- Selection of price peak periods
- Methodology: including all institutions of all cities -> regional food shocks
  - 1. Average price of harvest years
    - A. From **monthly** means
    - B. From **annual** means
  - 2. Relative price difference compared to previous 5 years
    - A. From the average price of harvest years derived from **monthly** means
    - B. From the average price of harvest years derived from **annual** means
  - 3. Limit value: price raise of 30% for a minor shock, 50% for a major shock
- Before 1349: calculations with d.gr./hl.; After 1349: calculation with gr.silver/hl.

# Periods of price peaks

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- 8 peak periods throughout the whole period:
  - 1292-93
  - 1302-04
  - 1314-16
  - 1321-23
  - 1328-30
  - 1339-43
  - 1348-52
  - 1356-61

# Periods of price peaks

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- 1292-93
  - +35,10%
- 1302-04
  - +54,35% and +43,07%
  - Franco-Flemish War (1297-1305)
  - Battle of the Golden spurs (11 July 1302)
  - 1305: Athis-sur-Orge: Lille/Douai/Orchies to French kingdom

-> Peaks based on small amount of data

# Periods of price peaks

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- 1314-16
  - +145,94% and +119,8% (highest in 14th century)
  - The Great Famine
    - actually 1315-17, but skewed because of the yearly averages & starting/ending date of the accounts
  - Back to back harvest failures because of heavy rainfall
  - Only data for Bruges (Saint-John) and Douai (Saint-Amé)
    - Bruges hit harder? Staple right Douai? Or just because trading character of Bruges?



# Periods of price peaks

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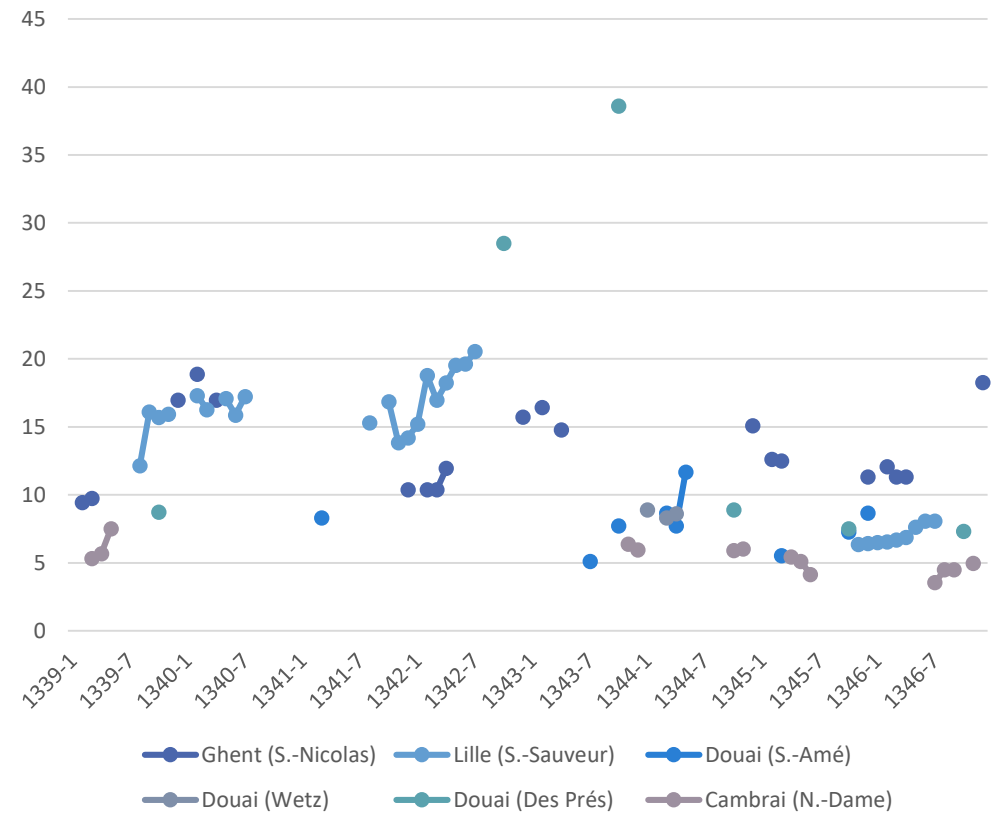
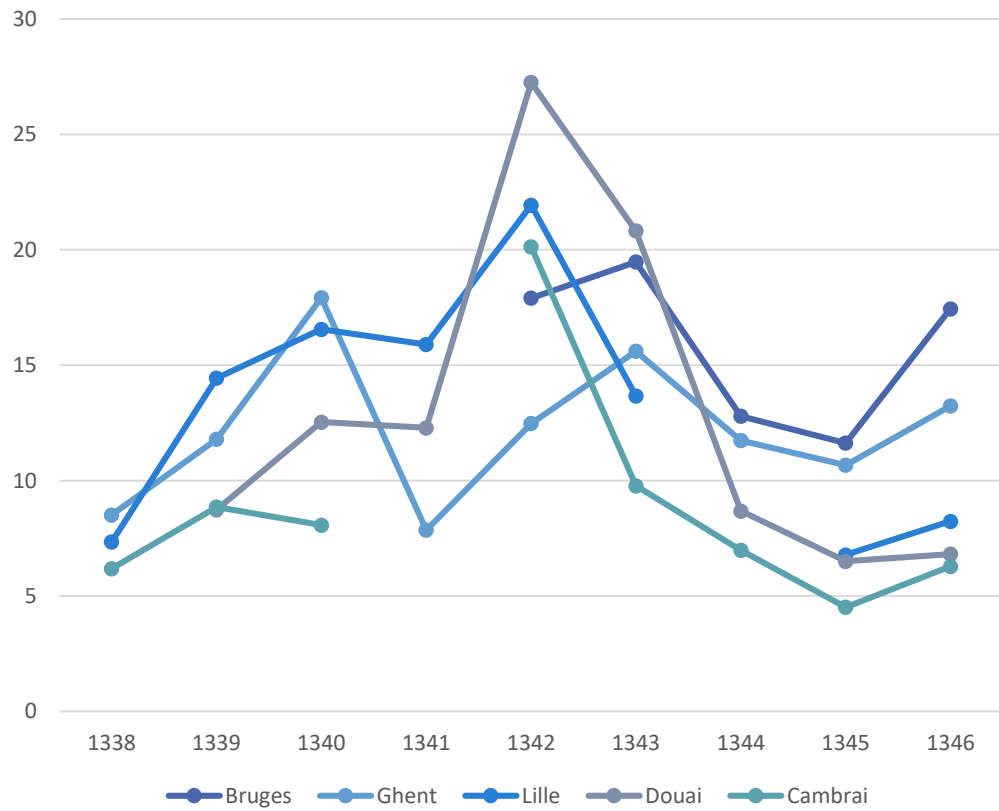
- 1321-1323
  - +30,67 and +31,3% (based on annual means)
  - Beginning of Peasants Revolt in coastal Flanders? Heavy taxation of the count
  - Weather anomalies?
- 1328-1330
  - +57,04% and +75,63% (based on monthly means)
  - End of Peasants Revolt in coastal Flanders: battle of Cassel (August 1328)
  - Repression by the count?
  - Weather anomalies?

# 1339-1343

Harvest year	Monthly avg.	Rel. diff. With previous 5 years (monthly avg.)	Annual avg.	Ref. diff. With previous 5 years (annual avg.)
1339-1340	16,28	99,94	12,68	47,64
1340-1341	11,80	18,79	13,17	39,66
1341-1342	16,57	55,55	17,46	70,76
1342-1343	16,11	33,04	15,80	31,14

- Hundred Years' War
  - England vs. France -> strategic importance of Walloon Flanders
  - 1339: Siege of Cambrai
  - 1340: Battle of Sluys
  - Bruges/Ghent: anglophile 'Artevelde-regime'

# 1339-1343

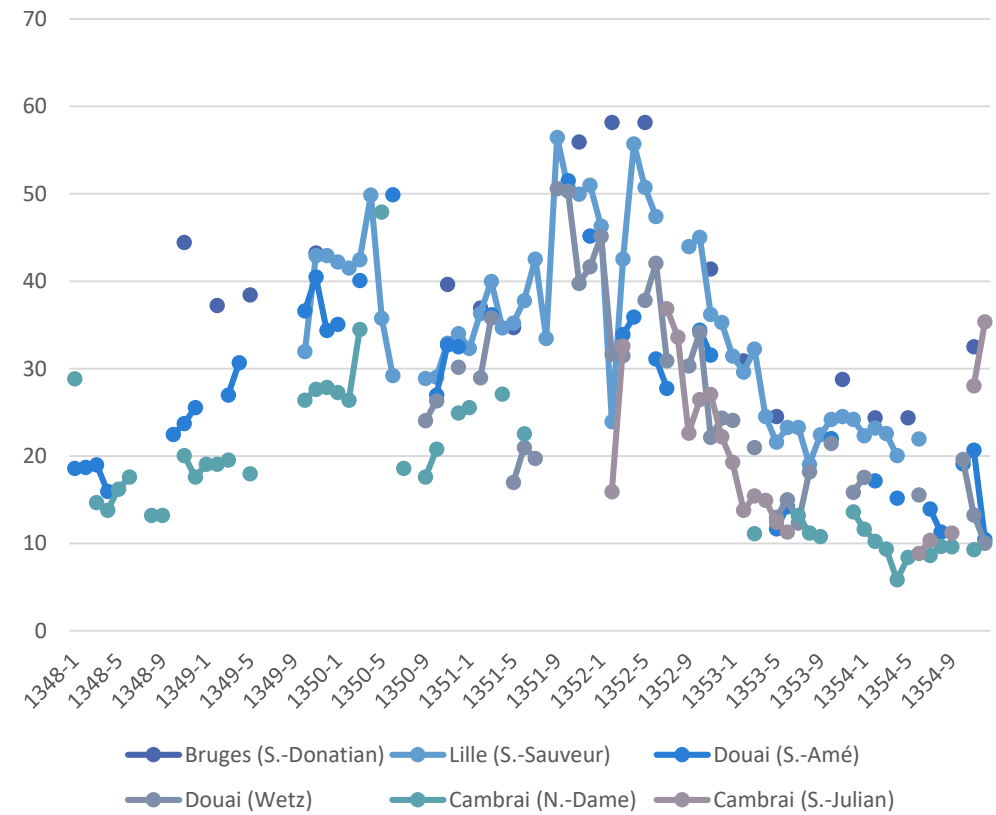
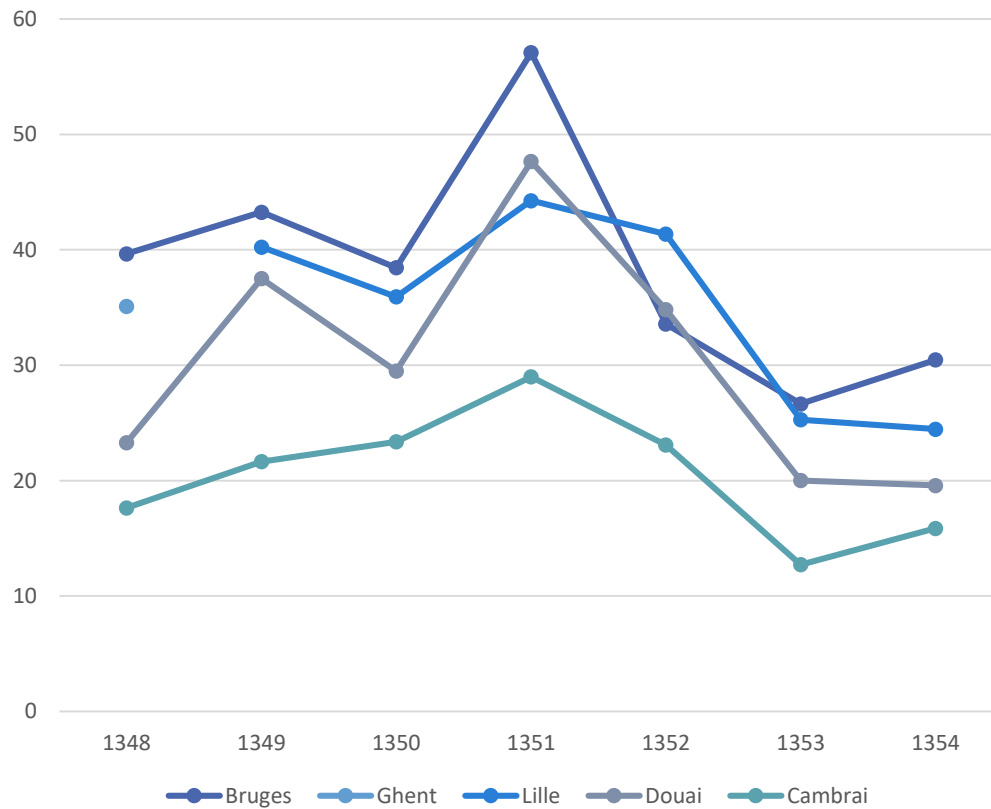


# 1348-1352

Harvest year	Monthly avg.	Rel. diff. With previous 5 years (monthly avg.)	Annual avg.	Ref. diff. With previous 5 years (annual avg.)
1348-1349	24,09385	32,81845	32,84775	48,6124
1349-1350	36,47108	95,42338	31,98997	33,59472
1350-1351	29,91723	32,35477	35,30831	31,10745
1351-1352	41,36436	62,29095	36,44491	20,49589

- Black Death
  - Crimea (1347) -> Italy -> northwestern-Europe (1348)
  - Fleas on rats & humans
- Coin revaluations
  - 1350, 1352

# 1348-1352

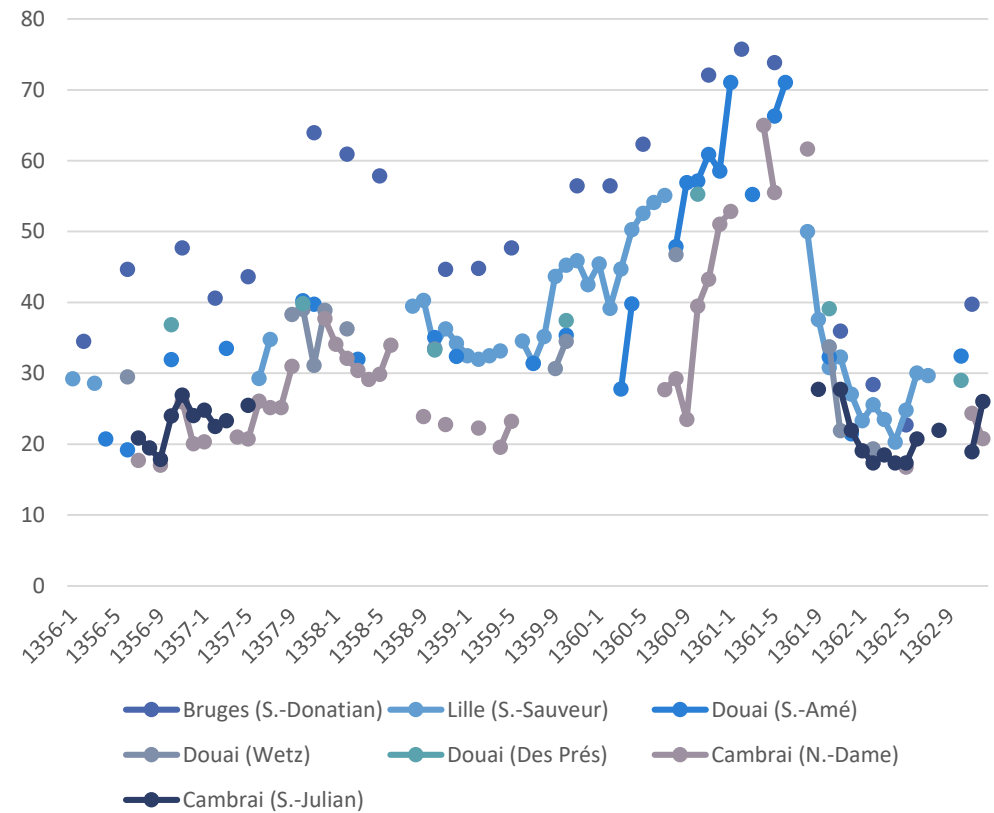
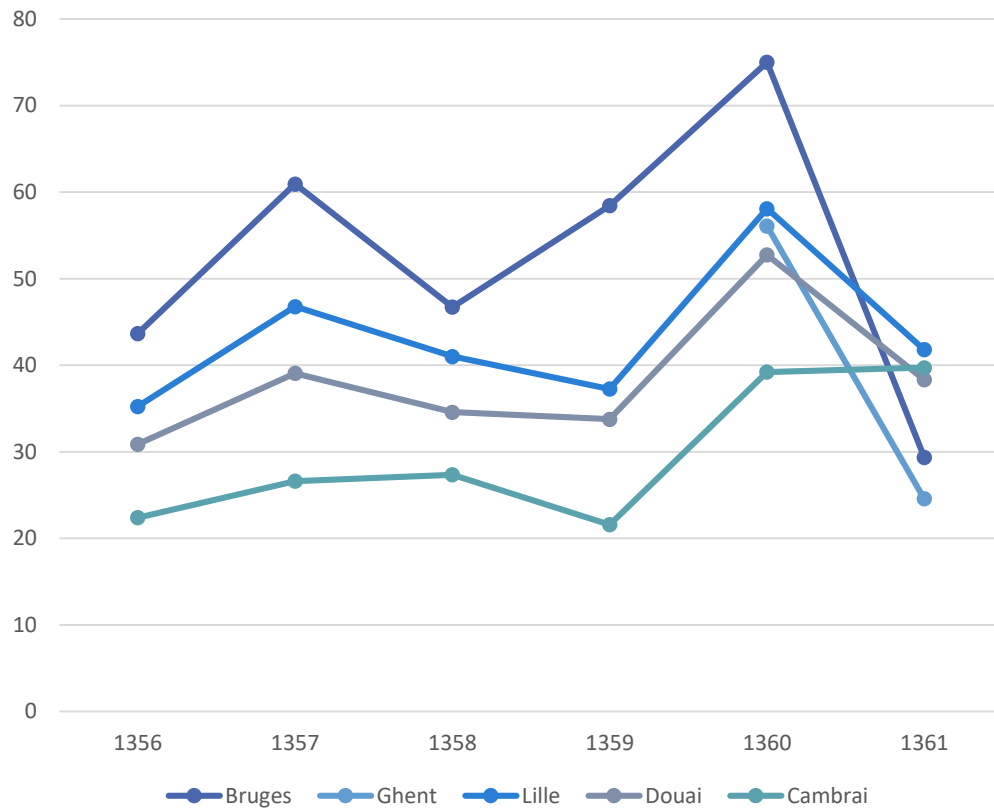


# 1356-1361

Harvest year	Monthly avg.	Rel. diff. With previous 5 years (monthly avg.)	Annual avg.	Ref. diff. With previous 5 years (annual avg.)
1356-1357	27,60547	11,07297	35,30459	35,60327
1357-1358	35,26615	59,56325	37,24418	44,31733
1358-1359	32,6073	32,72297	36,33576	27,45025
1359-1360	44,35202	59,8908	48,74584	53,12352
1360-1361	58,9931	77,74848	45,02639	21,25596

- 1360: Return of the plague (1360-61)
  - Blockmans: more severe than Black Death!

# 1356-1361



# Quod 1369-71?

Harvest year	Monthly avg.	Rel. diff. With previous 5 years (monthly avg.)	Annual avg.	Ref. diff. With previous 5 years (annual avg.)
1368-1369	33,46219	-17,1412	41,85776	5,168743
1369-1370	47,93287	28,06244	44,6323	11,80909
1370-1371	37,49684	-6,85777	38,00383	-9,59072

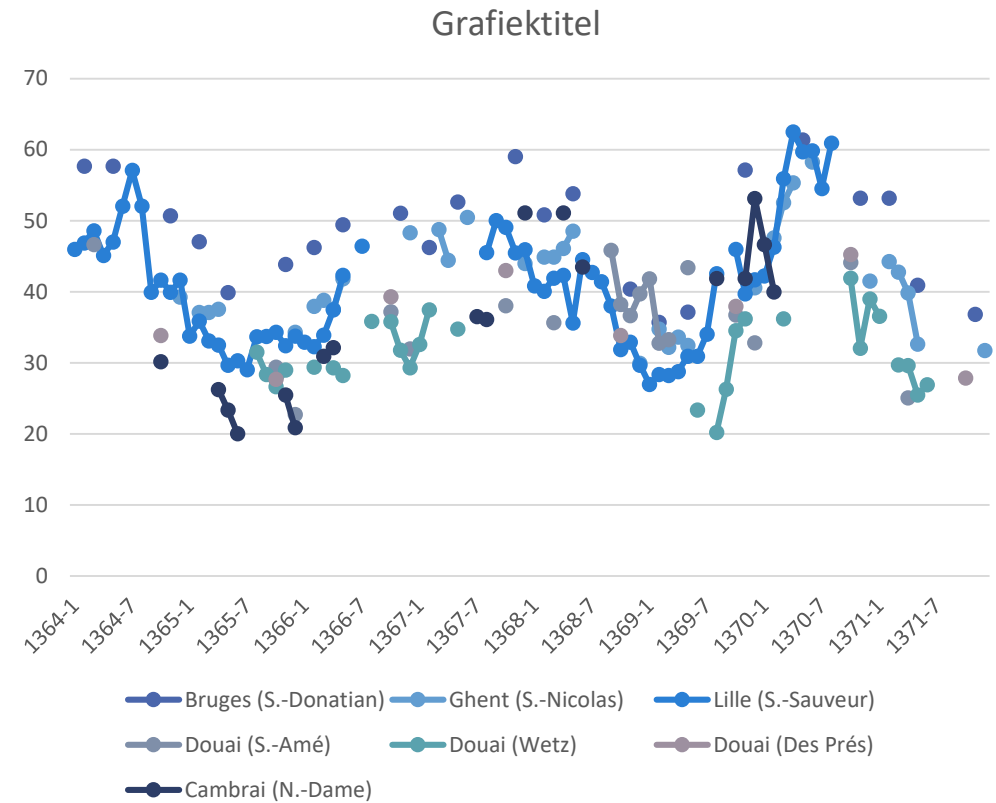
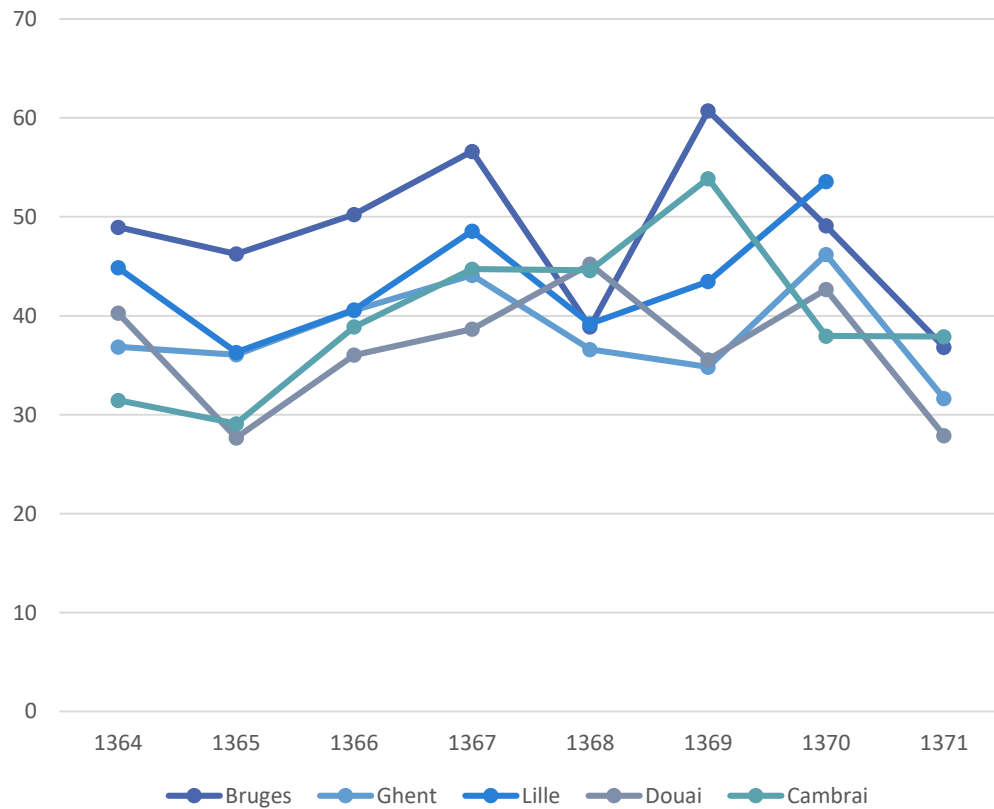
- 1369: Return of the plague (1369-1370)
- 1369: Marriage of Philip the Bold and Margaret of Flanders
  - Walloon Flanders back to the county of Flanders
  - Influence on price?
- Price peak not so severe!



Illumination from the *Grandes Chroniques de France* showing Philip marrying Margaret of Flanders in 1369 (Source: <https://www.historytoday.com/richard-cavendish/philip-bold-becomes-duke-burgundy>)



# 1364-1371



# Conclusion

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- Newly constructed price series detailed & useful, especially from 1320 onwards
- Bruges highest series on long term & most of the peaks
  - Followed by Ghent/Lille, then Douai, Cambrai the lowest
- All the series are remarkably parallel to each other
  - Already high degree of market integration
- Black Death as transition event from quasi-stable price periods (e.g. 1330-1339) to a very volatile course

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# Questions?

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