Inflation and Individual Investors' Behavior: Evidence from the German Hyperinflation

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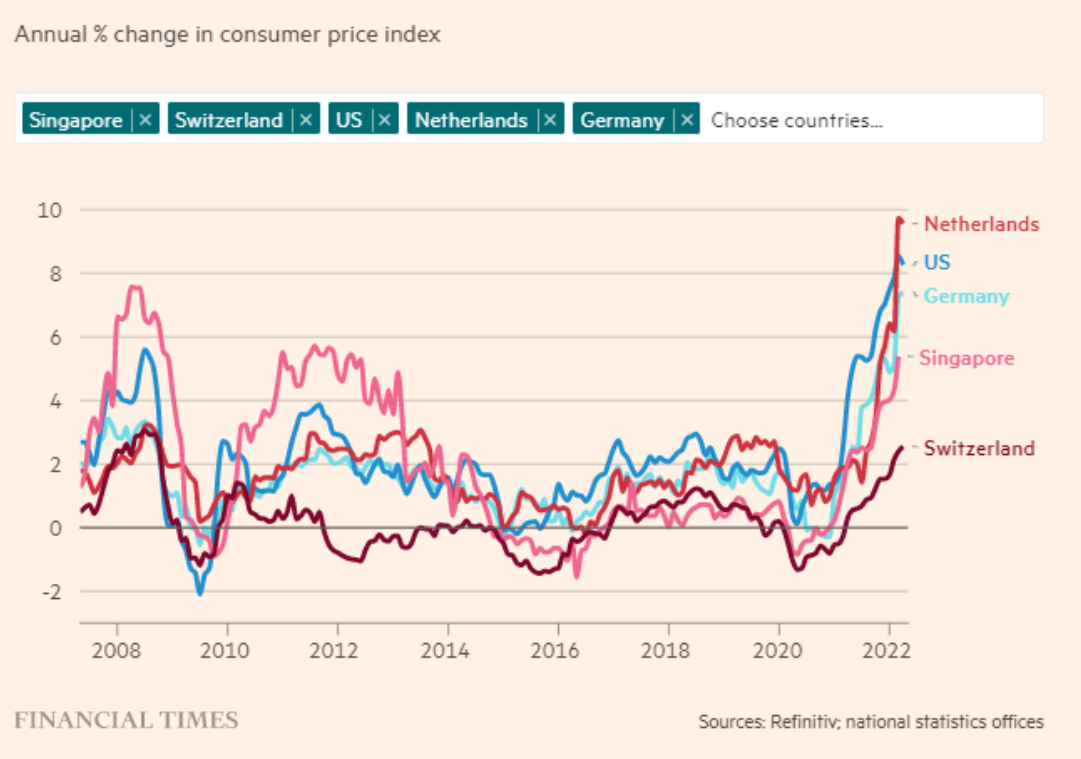
Motivation

– Following the outbreak of the Covid-19 pandemic and the war in Ukraine, inflation resurfaced in many countries:



→ Inflation is among the most important economic risks faced by individual investors.

Motivation (II)

- Little is known about how individual investors respond to the prospect of higher inflation, and theory provides conflicting hypotheses on this question:
  - **Hedging hypothesis**: Investors buy more (sell less) stocks in inflationary periods (e.g., Fama and Schwert, 1977; Fama, 1981; Boudoukh and Richardson, 1993; Bekaert and Wang, 2010).
  - **Money illusion hypothesis**: Investors buy less (sell more) stocks in inflationary periods (e.g., Modigliani and Cohn, 1979; Ritter and Warr, 2002; Cohen et al., 2005).

→ Understanding how investors react to expected inflation is an empirical question.

This study

- How do investors respond to expected inflation?
  - Do investors buy stocks?
  - Do investors sell stocks?
  - Do different types of investors respond differently?
  - Is investors‘ behavior consistent with the hedging hypothesis or with the money illusion hypothesis?

Empirical challenges

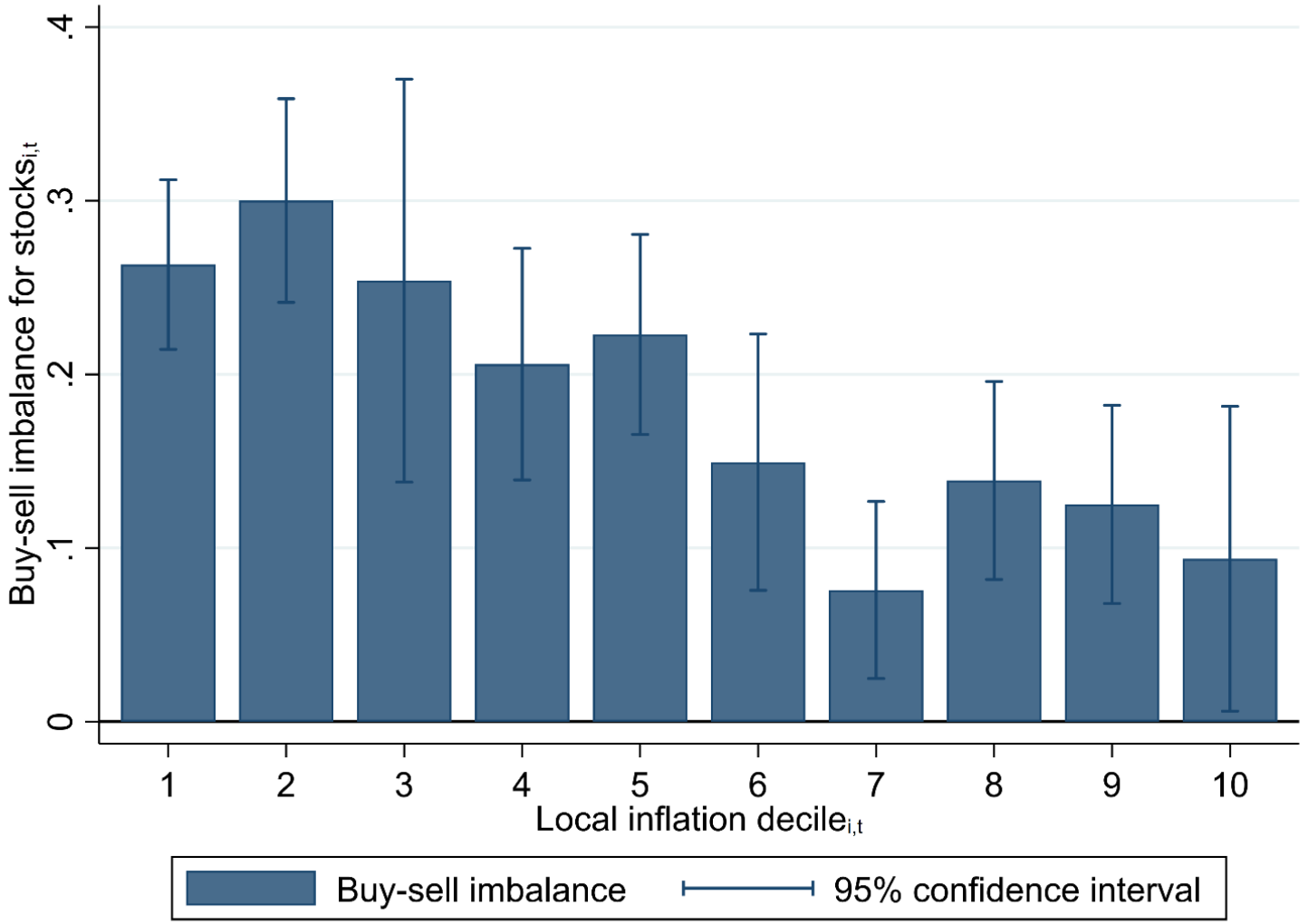
- A test of investors' response to inflation is subject to several empirical challenges:
  1) **Data on security transactions of investors**: One needs granular data on investors' security transactions. This allows for a direct analysis of investment decision-making in inflationary periods.
  2) **Sizable inflation**: One needs a time period in which inflation produces sizable financial losses if overlooked and thus attracts the attention of investors.
  3) **Data on inflation expectations of investors**: One needs a reliable measure of expected inflation that varies both over time and across investors. This is a necessary condition for a within-person analysis and enables one to control for the overall time trend.

How do we address the empirical challenges?

- We introduce a unique dataset containing local inflation and security portfolios of over 2,000 clients of a German bank between 1920 and 1924, covering the famous German hyperinflation.

- The data and the time period are ideally suited to address each of the empirical challenges:
  1) **Data on security transactions of investors** ✓
  2) **Sizable inflation** ✓
  3) **Data on inflation expectations of investors** ✓

Preview of the main result



Contribution

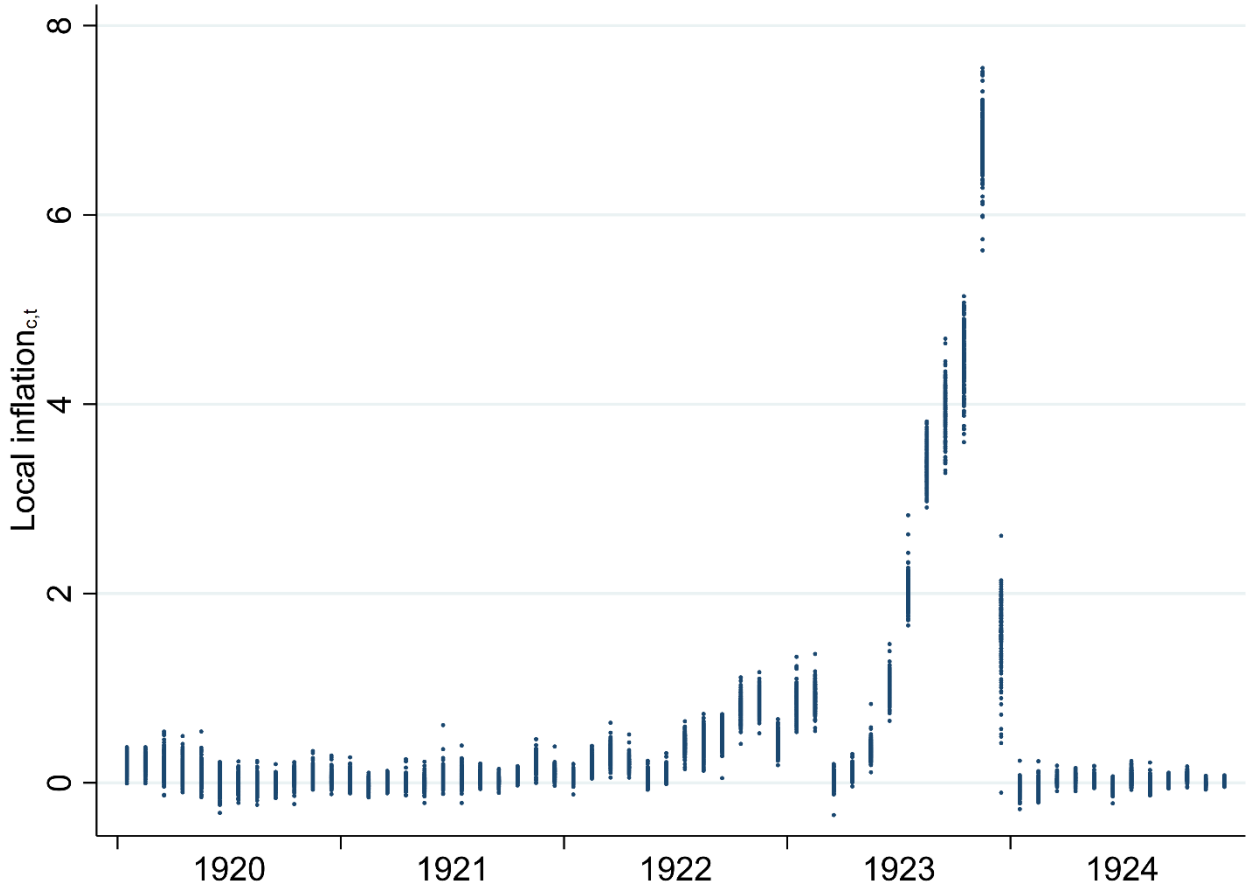
- **Inflation and investors‘ behavior**:
  - Inflation and stock returns:
    - Positive relation: e.g., Branch (1974), Firth (1979), Boudoukh and Richardson (1993)
    - Negative relation: e.g., Fama and Schwert (1977), Fama (1981), Ritter and Warr (2002), Cohen et al. (2005), Bekaert and Wang (2010)
  - → Stock returns only provide indirect evidence of investors‘ behavior. We provide direct evidence of investors‘ response to inflation.

- **Individual investor behavior**:
  - Individual investors are subject to a host of behavioral biases (Shefrin and Statman (1985), Odean (1998), Barber and Odean (2000), Barber and Odean (2001), Grinblatt and Keloharju (2001), Barber and Odean (2008), Goetzmann and Kumar (2008), Grinblatt and Keloharju (2009))
  - → Ours is the first paper that investigates individual investors‘ response to inflation.

Data

- **Investor data**:
  - Deposit books (*Depotbücher*) of a German bank
  - 49,415 trades in stocks, bonds, and foreign exchange of 2,262 clients between 1920 and 1924
- **Local inflation data**:
  - Quarterly Issue of the German Statistical Office (*Vierteljahresheft des Statistischen Reichsamts*)
  - Monthly CPIs of 633 towns in Germany with more than 10,000 inhabitants between 1920 and 1924
  - The CPI is based on a basket of goods considered representative for a family of five members.
    - Groceries make up approximately 80% of the basket.
    - D'Acunto, Malmendier, Ospina, and Weber (2021) show that when individuals form inflation expectations, they strongly rely on experienced grocery price changes.

Distribution of local inflation



Determinants of local inflation

	Local inflation$_{c,t}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log(local population)$_{c,1919}$	0.021*					0.016	
	(1.69)					(1.67)	
Occupied (d)$_{c,t}$		0.081**				0.073*	0.029*
		(2.20)				(1.86)	(1.89)
Local unemployment rate$_{c,t}$			-6.387***			-6.471***	-0.084
			(-3.28)			(-3.17)	(-0.56)
German Central Bank (d)$_{c,1920}$				0.065*		0.013	
				(1.73)		(0.48)	
% local employees in paper$_{c,1921}$					0.116***	0.162*	
					(3.28)	(1.81)	
Year-month fixed effects	No	No	No	No	No	No	Yes
Town fixed effects	No	No	No	No	No	No	Yes
Adj. R^2	0.001	0.001	0.008	0.001	0.001	0.010	0.986
N	10,634	10,634	9,629	10,634	10,634	9,629	9,629

t-statistics are provided in parentheses.

Empirical approach

- $Buy - sell\ imbalance_{i,t} = \alpha_t + \alpha_i + \beta Local\ inflation_{i,t} + Controls_{i,t} + \varepsilon_{i,t}$
  - $Buy - sell\ imbalance_{i,t} = \frac{\#\ buys_{i,t} - \#\ sells_{i,t}}{\#\ buys_{i,t} + \#\ sells_{i,t}}$; net demand of the investor for stocks
  - $Local\ inflation_{i,t}$: local monthly inflation in the town where the investor lives
  - α_t: year-month fixed effects
  - α_i: client fixed effects
  - $Controls_{i,t}$: town-level control variables (Occupied (d), Local unemployment rate)

- Rationality predicts $\beta \geq 0$.
- Irrationality (money illusion) predicts $\beta \leq 0$.

Local inflation and stock trades

	Buy-sell imbalance for $stocks_{i,t}$					
					Jan. 1920-Jun. 1922	Jul. 1922-Sep. 1923
	(1)	(2)	(3)	(4)	(5)	(6)
Local $inflation_{i,t}$	-0.536**	-0.650**		-0.548**	-0.990*	-0.584**
	(-2.48)	(-2.63)		(-2.07)	(-1.83)	(-2.42)
Local $inflation_{i,t-1,t}$			-0.353***			
			(-2.57)			
Occupied $(d)_{i,t}$				-0.484*		
				(-1.93)		
Local unemployment $rate_{i,t}$				-2.188		
				(-0.74)		
Year-month fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Client fixed effects	No	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.036	0.036	0.035	0.037	0.021	0.055
N	8,057	8,057	7,961	7,962	3,394	4,663

t-statistics are provided in parentheses.

Cross-sectional analysis

	Buy-sell imbalance for stocks$_{i,t}$			
	(1)	(2)	(3)	(4)
Local inflation$_{i,t}$	-0.748***	-0.784***	-0.674***	-0.683***
	(-2.82)	(-3.04)	(-2.72)	(-2.80)
Local inflation$_{i,t}$ x Wealthy (d)$_{i,Jan.\ 1920}$	0.035***			
	(4.29)			
Local inflation$_{i,t}$ x Diversified (d)$_{i,Jan.\ 1920}$		0.095***		
		(5.83)		
Local inflation$_{i,t}$ x Bank employee (d)$_i$			0.085***	
			(6.61)	
Local inflation$_{i,t}$ x Levered (d)$_i$				0.053***
				(3.86)
Year-month fixed effects	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.078	0.080	0.038	0.036
N	3,561	3,561	8,057	8,057

t-statistics are provided in parentheses.

Alternative explanations

- We also test for several alternative explanations:
  - **Consumption**: Do investors shy away from stocks to finance consumption? Go to test
  - **Economic prospects**: Do investors shy away from stocks because local inflation reveals information about gloomy economic prospects of firms? Go to test
  - **Risk aversion**: Do investors shy away from stocks because local inflation increases their risk aversion? Go to test
  - **Other asset classes**: Do investors shy away from stocks because they invest in other asset classes that offer a hedge against inflation? Go to test

→ Results suggest that our findings are not driven by these alternative explanations.

Instrumental variables (IV) regressions

- Concern: Local inflation may be correlated with shocks to other determinants of stockholdings
- Distinctive feature of our investigation period: Money took the form of banknotes, which had to be printed and brought into circulation. This took place locally.
- Instrument: Share of local employees working in paper production
  - Relevance criterion:
    - Instrument needs to be correlated with local inflation
    - F-stat > 10, significant first-stage coefficient
  - Exclusion restriction:
    - Instrument needs to influence local stockholdings only through its impact on local inflation
    - Local capacity to produce paper was determined by environmental factors: Access to spruce trees and clean river water

Instrumental variables (IV) regressions (II)

	Buy-sell imbalance for stocks$_{i,t}$			
	(1)	(2)	(3)	(4)
Local inflation$_{i,t}$	-4.918*	-4.686*	-4.479**	-4.273**
	(-1.86)	(-1.78)	(-2.62)	(-2.61)
First-stage instrument				
% local employees in paper$_{i,1921}$	1.312***	1.307***		
	(3.46)	(3.46)		
High % local employees in paper (d)$_{i,1921}$			0.054***	0.054***
			(3.40)	(3.39)
Year-month fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Town characteristics	Yes	Yes	Yes	Yes
Client characteristics	No	Yes	No	Yes
N	7,956	7,956	7,956	7,956
F-statistic of first-stage regression	12.199	12.198	12.668	12.565

Town characteristics: Log(local population)$_{i,1919}$, Log(distance to state capital)$_i$, Log(distance to Berlin)$_i$, Log(distance to border)$_{i,1920}$, Occupied (d)$_{i,t}$, Local unemployment rate$_{i,t}$, and German Central Bank (d)$_{i,1920}$; Client characteristics: Male (d)$_i$, Other bank account (d)$_i$, Bank employee (d)$_i$, and Levered (d)$_i$. t-statistics are provided in parentheses.

Conclusion

- Inflation is among the most important economic risks faced by investors.
- In this study, we analyze how investors respond to inflation, using a unique dataset containing local inflation and security portfolios of more than 2,000 clients of a German bank between 1920 and 1924, covering the famous German hyperinflation.
- We find that investors buy less (sell more) stocks when facing higher local inflation.
- This effect is more pronounced for less sophisticated investors.

→Our findings are consistent with investors suffering from money illusion.

- Our results underscore concerns that the financial literacy of individuals may not be sufficient to respond appropriately to the currently resurfacing inflation.

Appendix

Preview of the results

- We find that investors buy less (sell more) stocks when facing higher local inflation.
- This effect is more pronounced for less sophisticated investors.
- We also document a positive relation between local inflation and forgone returns following stock sales.

→Our findings are consistent with investors suffering from money illusion.

- Alternative explanations are unlikely to drive our results. Do investors shy away from stocks…
  - … because local inflation reveals information about gloomy economic prospects of firms? ✘
  - … because local inflation increases their risk aversion? ✘
  - … to finance consumption? ✘
  - … because they invest in other asset classes that offer a hedge against inflation? ✘

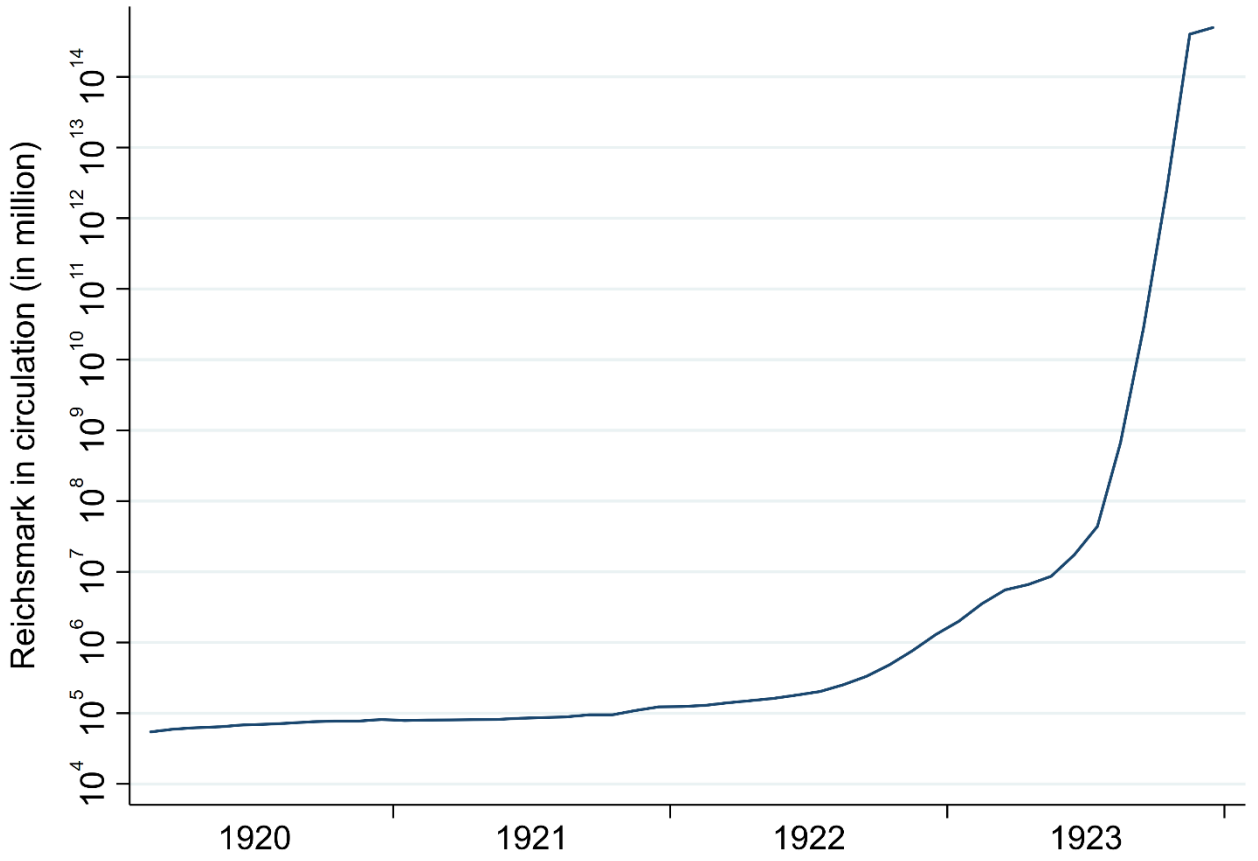
The money illusion hypothesis of Modigliani and Cohn (1979)

	Response of rational investors to higher expected inflation	Response of irrational investors (money illusion) to higher expected inflation
– Gordon Growth Model: $\frac{D_{t+1}}{P_t} = R - G$ – D_{t+1}: dividend per share – P_t: share price – R: nominal discount rate – G: nominal growth rate of cash flow	$\leftrightarrow \frac{D_{t+1}}{P_t} = R \uparrow - G \uparrow$	$\uparrow \frac{D_{t+1} \leftrightarrow}{P_t \downarrow} = R \uparrow - G \leftrightarrow$ The perceived price is lower than the actual market price. Thus, investors buy less (sell more) stocks in inflationary periods.

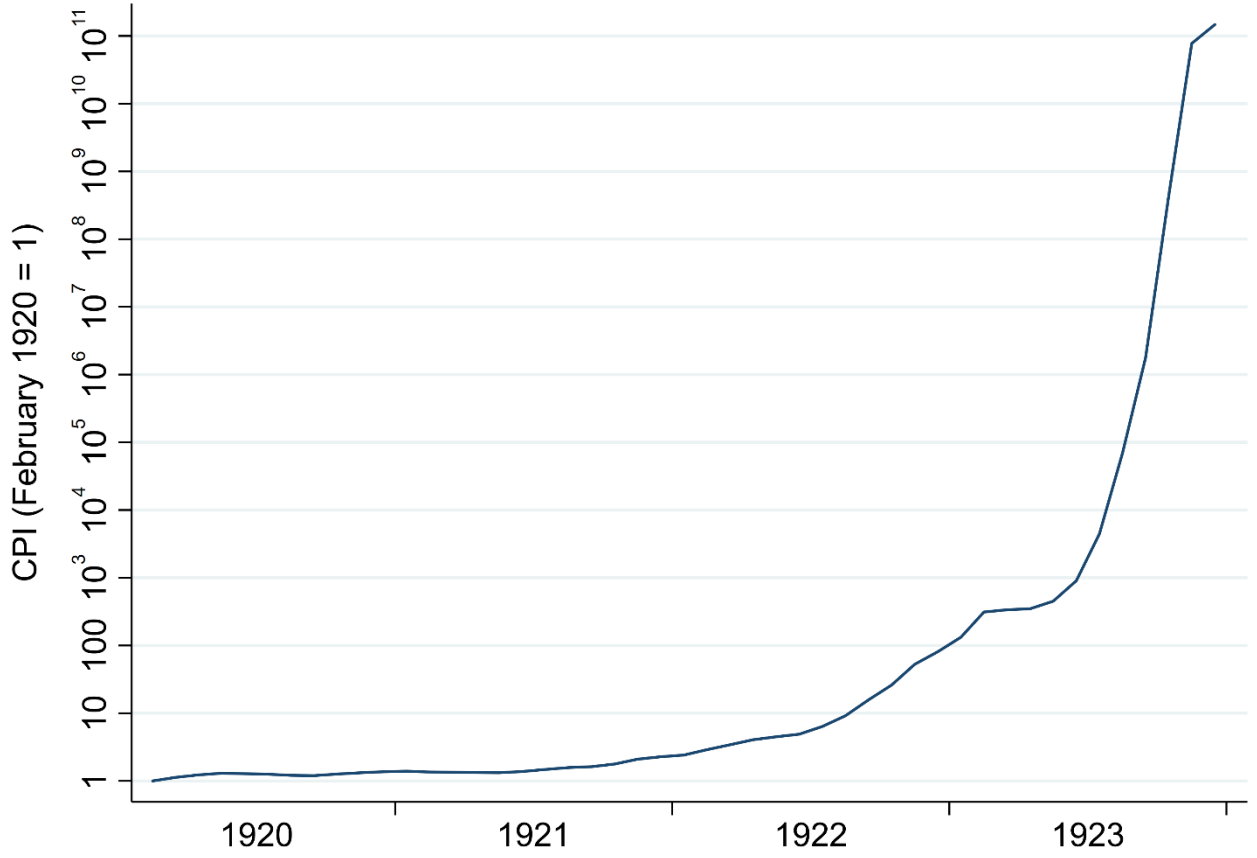
The origins of inflation

- Germany lost the Frist World War in 1918.
- Thereafter, it had plenty of financial obligations:
  - “Normal” public expenditures
  - War debt
  - Pensions to war veterans, widows, etc.
  - Reparations to the Allies of the First World War
  - ...
- Where to find the money?
  - Tax revenues were low
  - Imposing new taxes was difficult
  - Issuing new debt in Germany was difficult
  - Issuing new debt internationally was not possible
  - → Printing money…

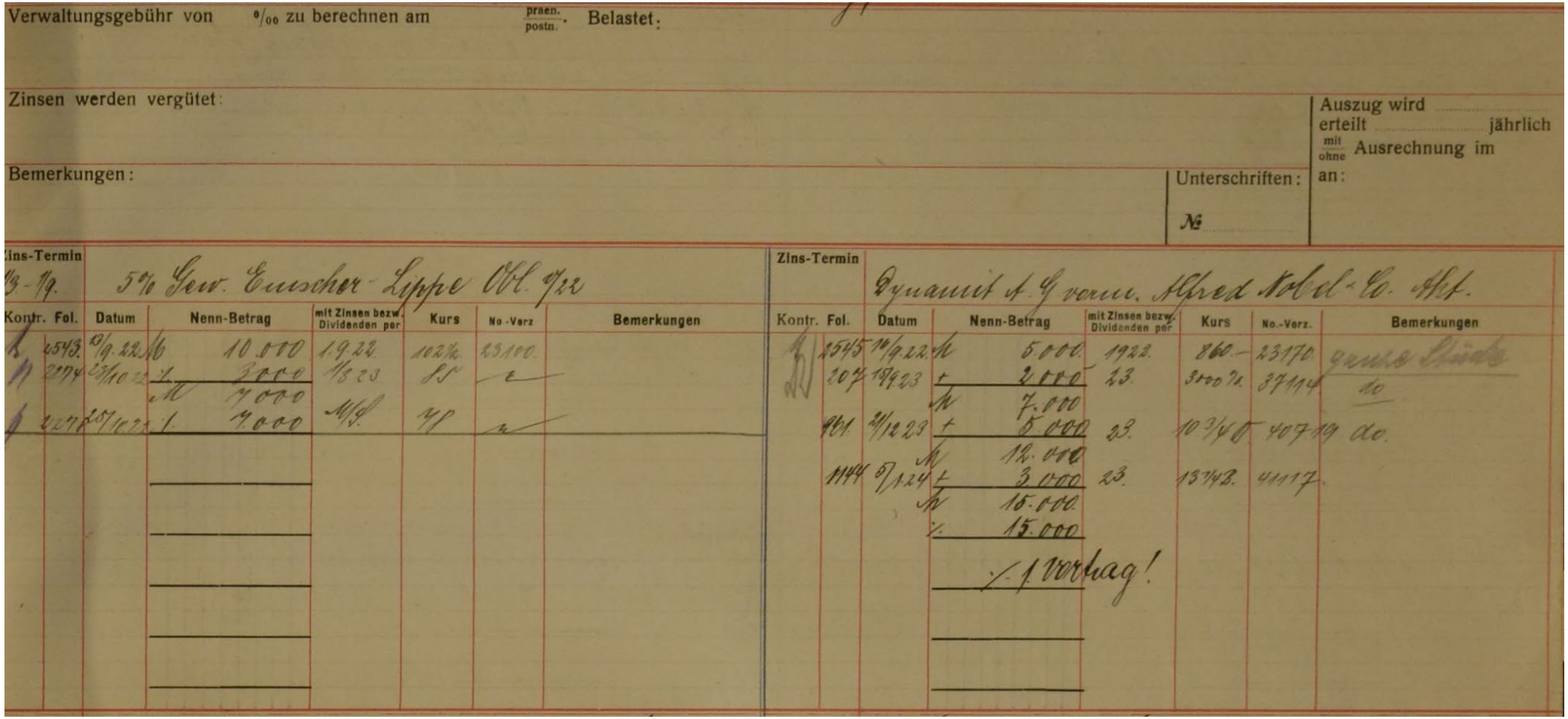
Money supply in Germany in the 1920s



Inflation in Germany in the 1920s



Investor data



Verwaltungsgebühr von ‰ zu berechnen am praen. / postn. Belastet:

Zinsen werden vergütet:

Auszug wird erteilt jährlich mit / ohne Ausrechnung im an:

Bemerkungen:

Unterschriften: №

Zins-Termin 1/3-1/9.

5% Gew. Ensdorf-Lippe Obl. 7/22

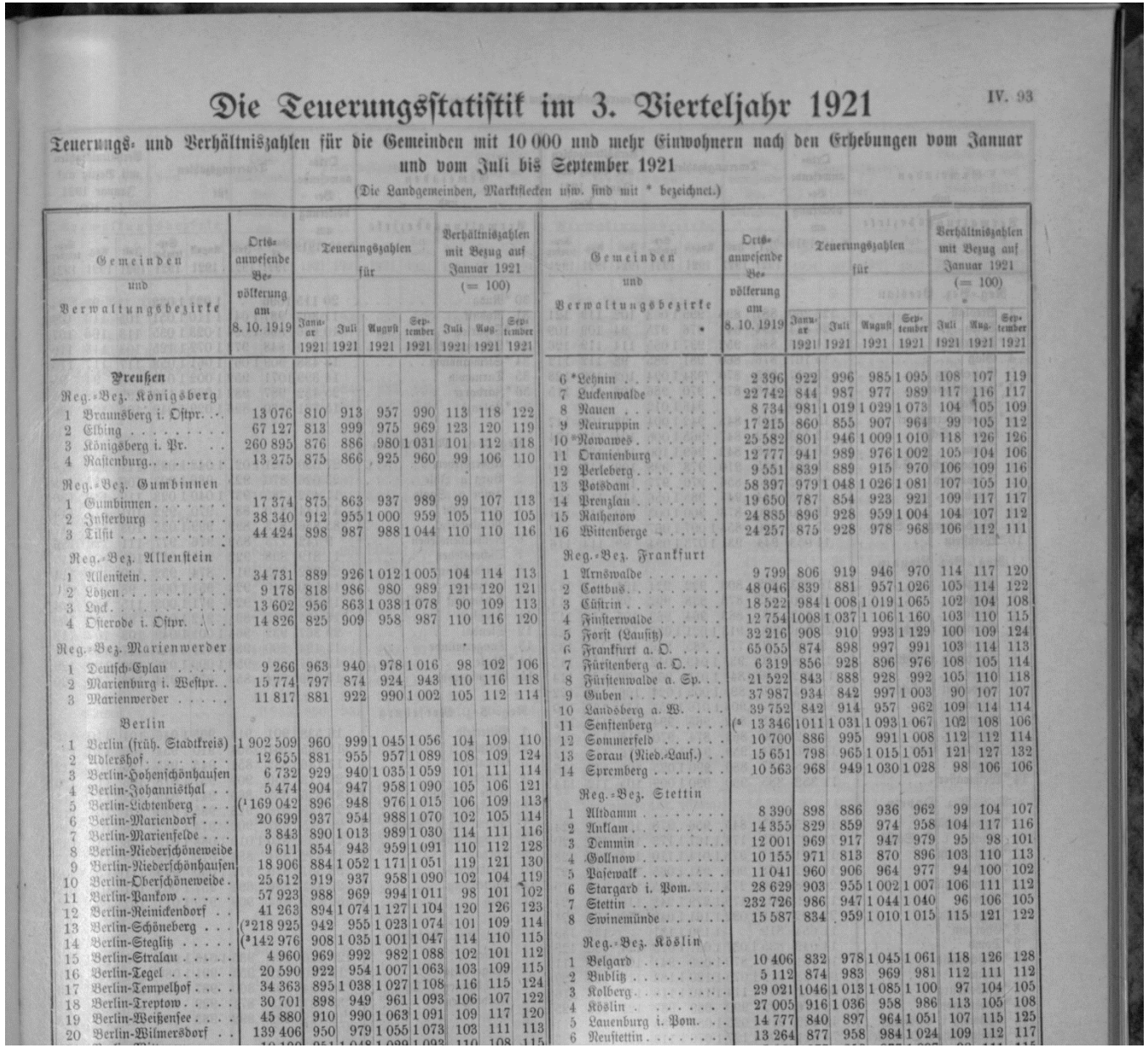
Kontr.	Fol.	Datum	Nenn-Betrag	mit Zinsen bezw. Dividenden per	Kurs	No.-Verz	Bemerkungen
	2543	19.9.22	M 10.000	1.9.22.	102½	23100.	
	2274	23/10 22	L 3000	1/3 23	85		
			M 7000				
	2278	20/10 22	L 7000	M/S.	78		

Zins-Termin

Dynamit A. G. vorm. Alfred Nobel & Co. Hst.

Kontr.	Fol.	Datum	Nenn-Betrag	mit Zinsen bezw. Dividenden per	Kurs	No.-Verz.	Bemerkungen
	2545	14/9.22	M 5.000	1922.	860.–	23170	ganze Stücke
	207	17/1 23	+ 2.000	23.	3100 %	37114	10
			M 7.000				
	961	21/12 23	+ 5.000	23.	103/4 %	40719	do.
			M 12.000				
	1144	5/12 24	+ 3.000	23.	1374 %	41117	
			M 15.000				
			ℳ 15.000				
			ℳ 1 Vortrag!				

Local inflation data



Die Teuerungsstatistik im 3. Vierteljahr 1921

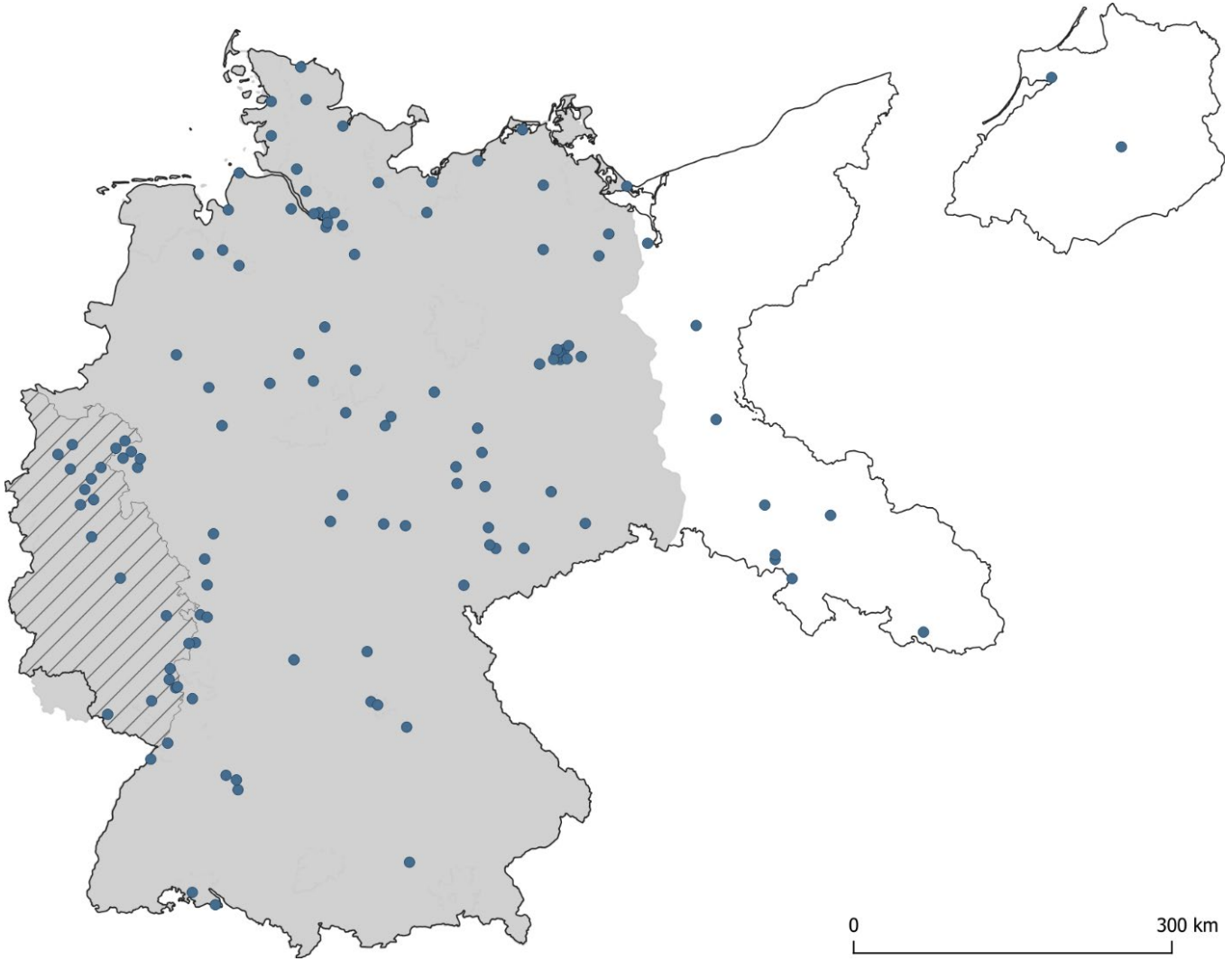
IV. 93

Teuerungs- und Verhältniszahlen für die Gemeinden mit 10 000 und mehr Einwohnern nach den Erhebungen vom Januar und vom Juli bis September 1921

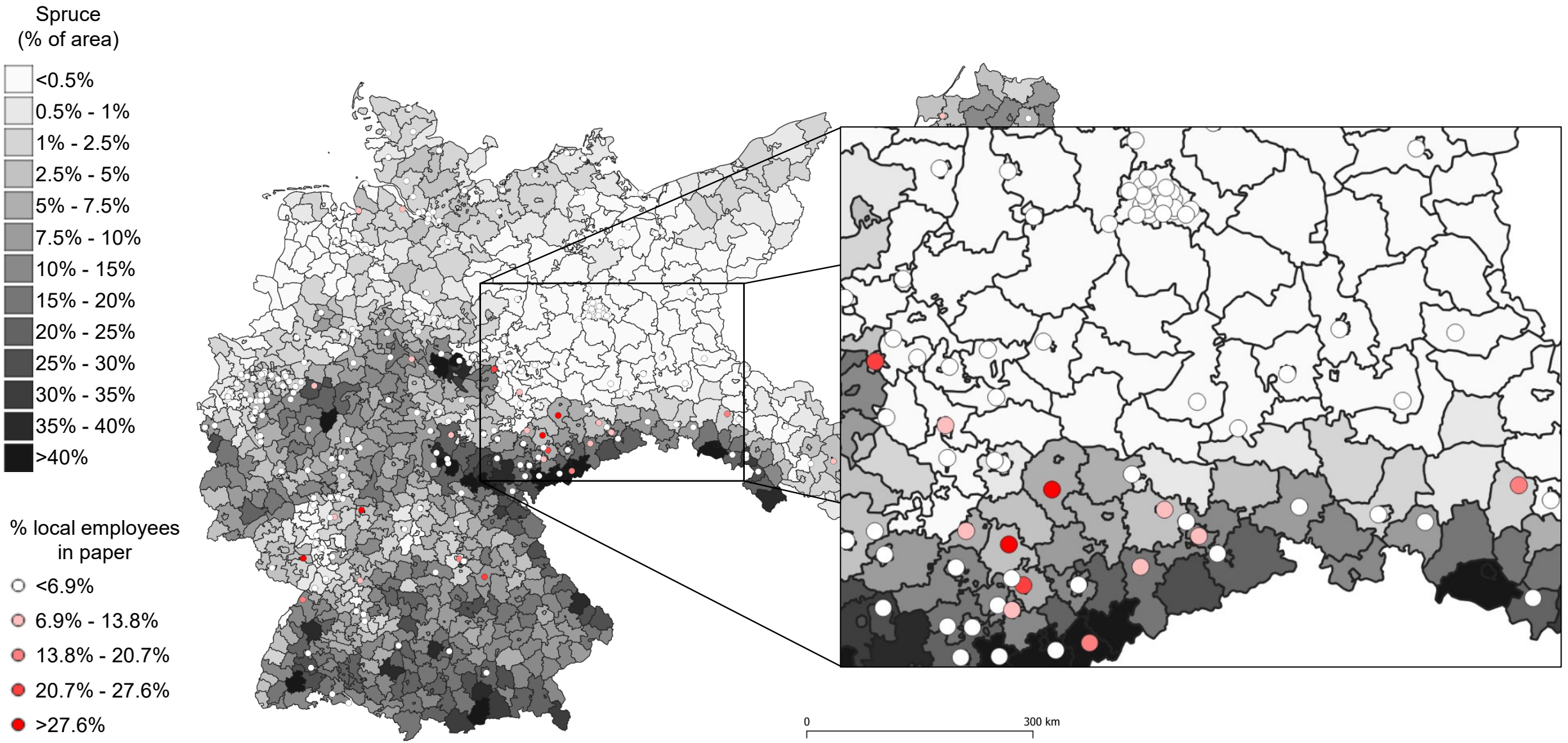
(Die Landgemeinden, Marktflecken usw. sind mit * bezeichnet.)

Gemeinden und Verwaltungsbezirke	Ortsanwesende Bevölkerung am 8. 10. 1919	Teuerungszahlen für Januar 1921	Juli 1921	August 1921	September 1921	Verhältniszahlen mit Bezug auf Januar 1921 (= 100) Juli 1921	August 1921	September 1921
Preußen								
Reg.-Bez. Königsberg								
1 Braunsberg i. Ostpr.	13 076	810	913	957	990	113	118	122
2 Elbing	67 127	813	999	975	969	123	120	119
3 Königsberg i. Pr.	260 895	876	886	980	1 031	101	112	118
4 Rastenburg	13 275	875	866	925	960	99	106	110
Reg.-Bez. Gumbinnen								
1 Gumbinnen	17 374	875	863	937	989	99	107	113
2 Insterburg	38 340	912	955	1 000	959	105	110	105
3 Tilsit	44 424	898	987	988	1 044	110	110	116
Reg.-Bez. Allenstein								
1 Allenstein	34 731	889	926	1 012	1 005	104	114	113
2 Lötzen	9 178	818	986	980	989	121	120	121
3 Lyck	13 602	956	863	1 038	1 078	90	109	113
4 Osterode i. Ostpr.	14 826	825	909	958	987	110	116	120
Reg.-Bez. Marienwerder								
1 Deutsch-Eylau	9 266	963	940	978	1 016	98	102	106
2 Marienburg i. Westpr.	15 774	797	874	924	943	110	116	118
3 Marienwerder	11 817	881	922	990	1 002	105	112	114
Berlin								
1 Berlin (früh. Stadtkreis)	1 902 509	960	999	1 045	1 056	104	109	110
2 Adlershof	12 655	881	955	957	1 089	108	109	124
3 Berlin-Hohenschönhausen	6 732	929	940	1 035	1 059	101	111	114
4 Berlin-Johannisthal	5 474	904	947	958	1 090	105	106	121
5 Berlin-Lichtenberg	(1 169 042	896	948	976	1 015	106	109	113
6 Berlin-Mariendorf	20 699	937	954	988	1 070	102	105	114
7 Berlin-Marienfelde	3 843	890	1 013	989	1 030	114	111	116
8 Berlin-Niederschöneweide	9 611	854	943	959	1 091	110	112	128
9 Berlin-Niederschönhausen	18 906	884	1 052	1 171	1 051	119	121	130
10 Berlin-Oberschöneweide	25 612	919	937	958	1 090	102	104	119
11 Berlin-Pankow	57 923	988	969	994	1 011	98	101	102
12 Berlin-Reinickendorf	41 263	894	1 074	1 127	1 104	120	126	123
13 Berlin-Schöneberg	(2 218 925	942	955	1 023	1 074	101	109	114
14 Berlin-Steglitz	(3 142 976	908	1 035	1 001	1 047	114	110	115
15 Berlin-Stralau	4 960	969	992	982	1 088	102	101	112
16 Berlin-Tegel	20 590	922	954	1 007	1 063	103	109	115
17 Berlin-Tempelhof	34 363	895	1 038	1 027	1 108	116	115	124
18 Berlin-Treptow	30 701	898	949	961	1 093	106	107	122
19 Berlin-Weißensee	45 880	910	990	1 063	1 091	109	117	120
20 Berlin-Wilmersdorf	139 406	950	979	1 055	1 073	103	111	113
6 *Lehnin	2 396	922	996	985	1 095	108	107	119
7 Luckenwalde	22 742	844	987	977	989	117	116	117
8 Rauen	8 734	981	1 019	1 029	1 073	104	105	109
9 Neuruppin	17 215	860	855	907	964	99	105	112
10 *Nowawes	25 582	801	946	1 009	1 010	118	126	126
11 Oranienburg	12 777	941	989	976	1 002	105	104	106
12 Perleberg	9 551	839	889	915	970	106	109	116
13 Potsdam	58 397	979	1 048	1 026	1 081	107	105	110
14 Prenzlau	19 650	787	854	923	921	109	117	117
15 Rathenow	24 885	896	928	959	1 004	104	107	112
16 Wittenberge	24 257	875	928	978	968	106	112	111
Reg.-Bez. Frankfurt								
1 Arnswalde	9 799	806	919	946	970	114	117	120
2 Cottbus	48 046	839	881	957	1 026	105	114	122
3 Cüstrin	18 522	984	1 008	1 019	1 065	102	104	108
4 Finsterwalde	12 754	1008	1 037	1 106	1 160	103	110	115
5 Forst (Lausitz)	32 216	908	910	993	1 129	100	109	124
6 Frankfurt a. O.	65 055	874	898	997	991	103	114	113
7 Fürstenberg a. O.	6 319	856	928	896	976	108	105	114
8 Fürstenwalde a. Sp.	21 522	843	888	928	992	105	110	118
9 Guben	37 987	934	842	997	1 003	90	107	107
10 Landsberg a. W.	39 752	842	914	957	962	109	114	114
11 Senftenberg	(5 13 346	1011	1 031	1 093	1 067	102	108	106
12 Sommerfeld	10 700	886	995	991	1 008	112	112	114
13 Sorau (Niederlaus.)	15 651	798	965	1 015	1 051	121	127	132
14 Spremberg	10 563	968	949	1 030	1 028	98	106	106
Reg.-Bez. Stettin								
1 Altdamm	8 390	898	886	936	962	99	104	107
2 Anklam	14 355	829	859	974	958	104	117	116
3 Demmin	12 001	969	917	947	979	95	98	101
4 Gollnow	10 155	971	813	870	896	103	110	113
5 Pasewalk	11 041	960	906	964	977	94	100	102
6 Stargard i. Pom.	28 629	903	955	1 002	1 007	106	111	112
7 Stettin	232 726	986	947	1 044	1 040	96	106	105
8 Swinemünde	15 587	834	959	1 010	1 015	115	121	122
Reg.-Bez. Köslin								
1 Belgard	10 406	832	978	1 045	1 061	118	126	128
2 Bublitz	5 112	874	983	969	981	112	111	112
3 Kolberg	29 021	1046	1 013	1 085	1 100	97	104	105
4 Köslin	27 005	916	1 036	958	986	113	105	108
5 Lauenburg i. Pom.	14 777	840	897	964	1 051	107	115	125
6 Neustettin	13 264	877	958	984	1 024	109	112	117

Geographical distribution of investors



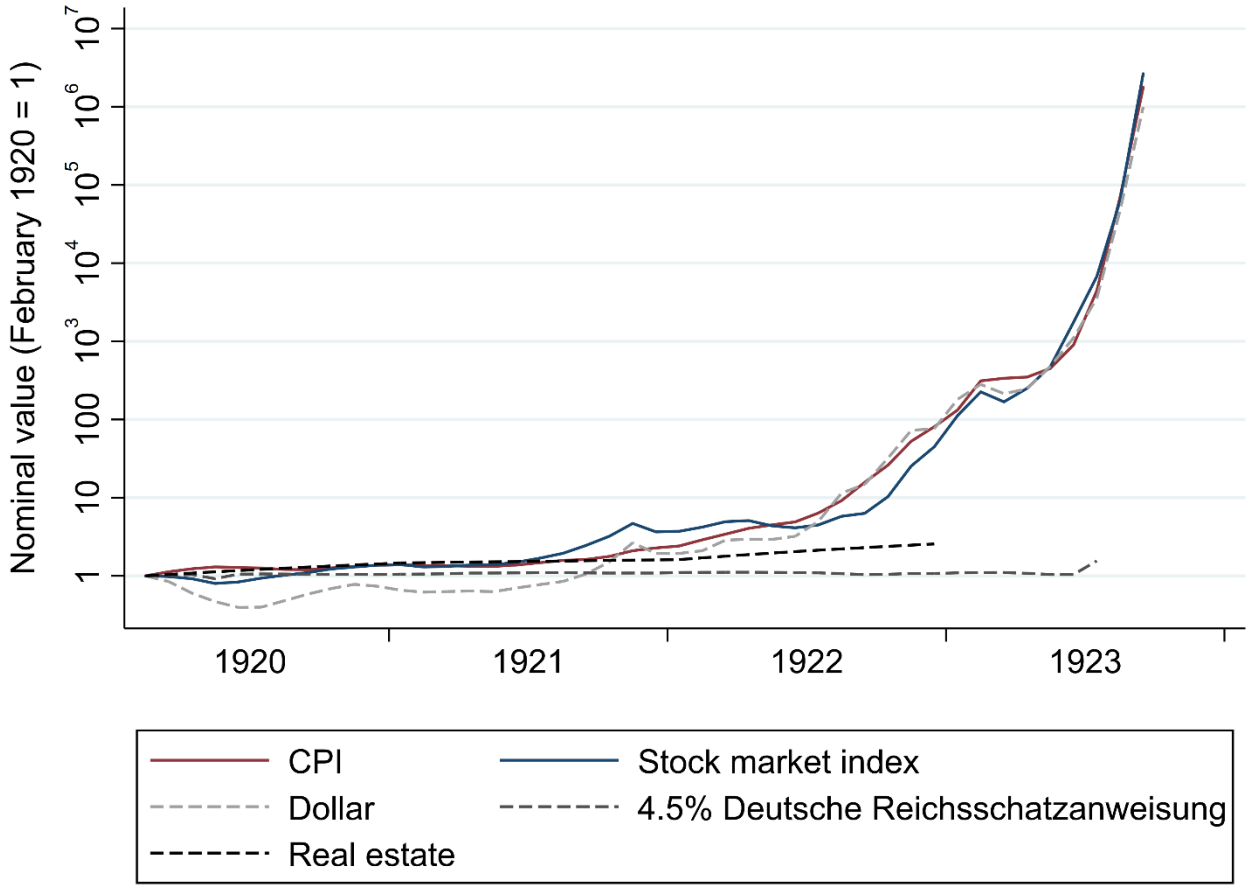
Instrumental variables (IV) regressions (II)



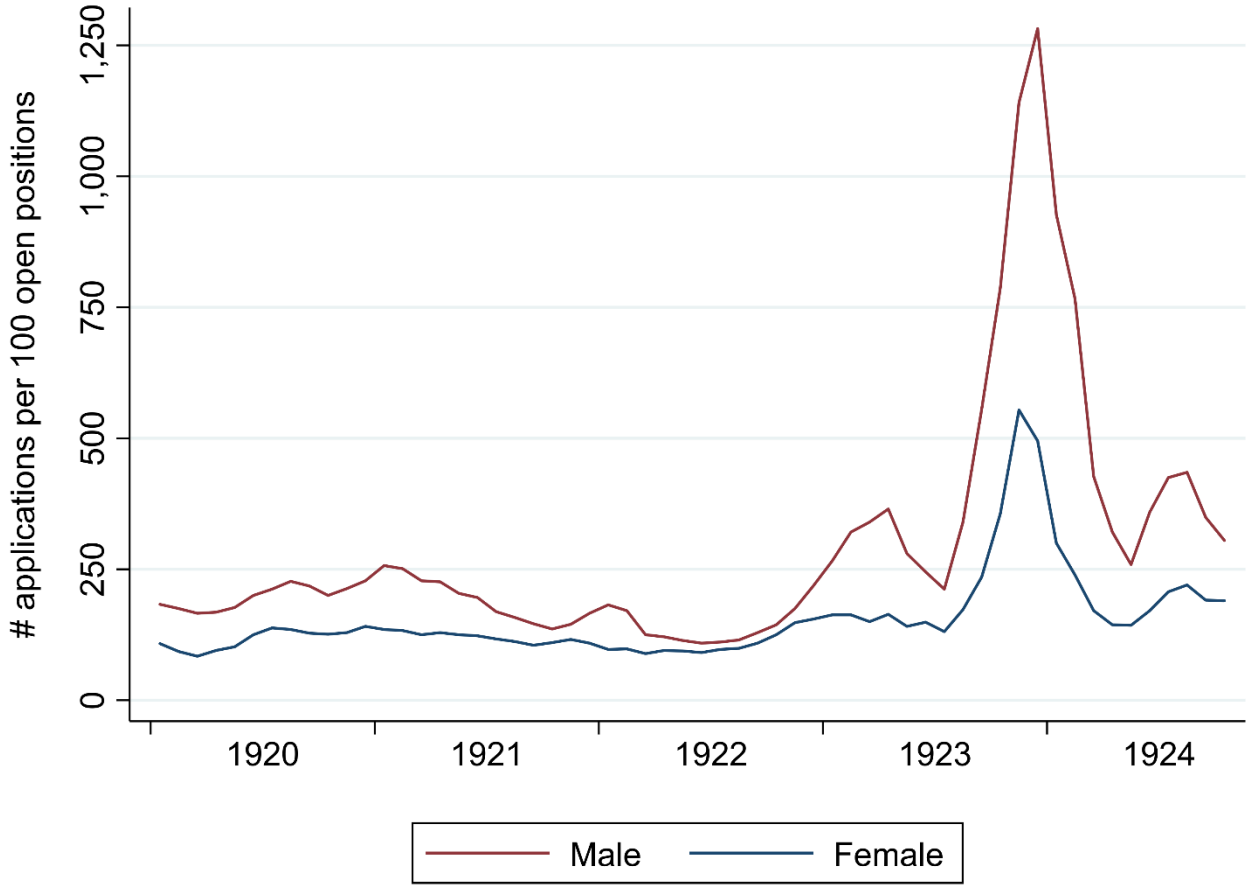
What financial instruments were available to investors in Germany in the 1920s?

- **Stocks and bonds**:
  - >20 stock exchanges in Germany
  - The Berlin Stock Exchange was the largest exchange in Germany and the second largest exchange in the world (after London).
  - >1,400 stocks and >2,400 bonds traded on the Berlin stock exchange
- **Derivatives**:
  - The derivatives market was shut down prior to the First World War.
- **Foreign exchange**:
  - Foreign exchange was subject to strict regulations.
- **Real estate**:
  - Real estate was subject to strict regulations.
- **Commodities**:
  - Gold was scarce.

How did different financial instruments perform in the 1920s?



Unemployment



Descriptive statistics

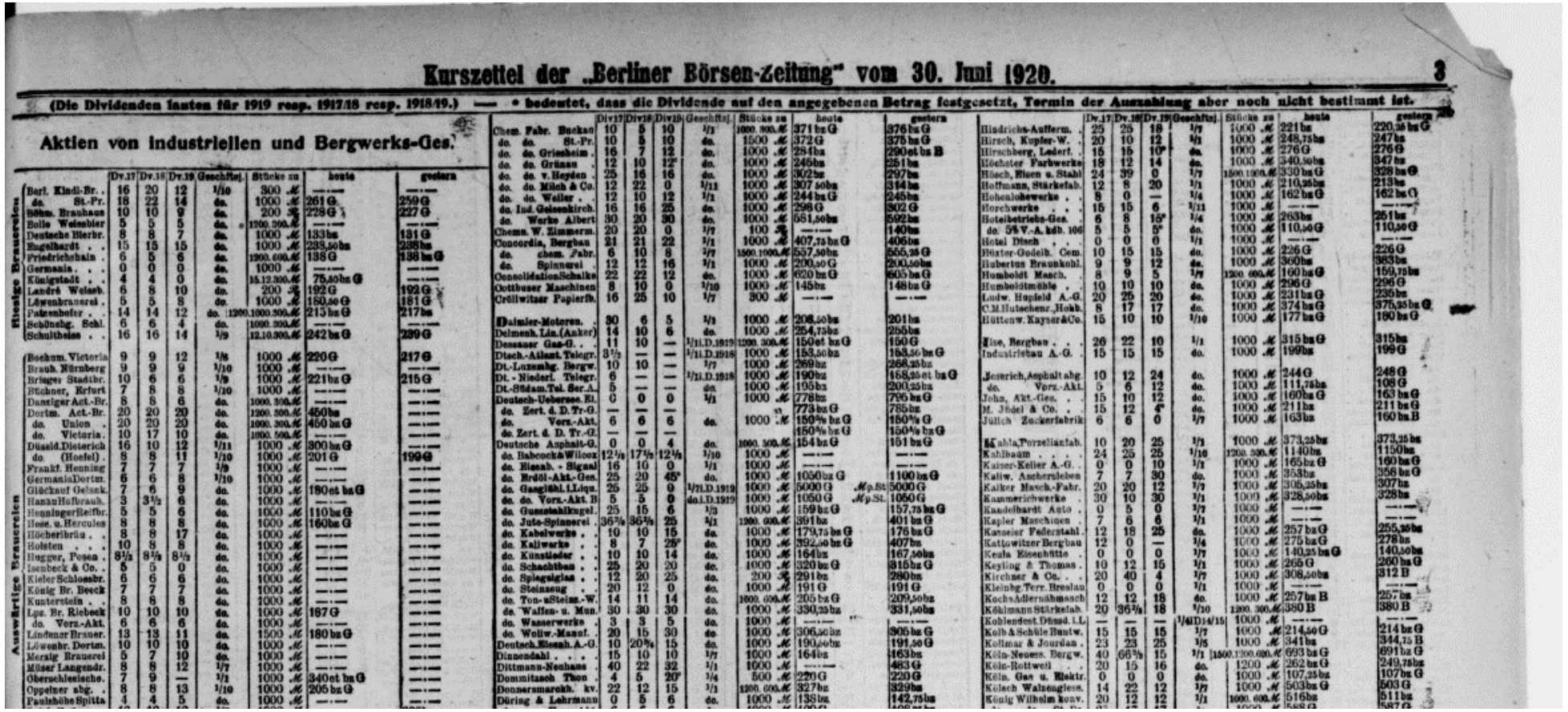
	Mean	Minimum	Median	Maximum	Std. dev.	N
Panel A: Client characteristics						
Male (d)	0.72	0.00	1.00	1.00	0.45	2,262
Germany (d)	0.89	0.00	1.00	1.00	0.31	2,260
Panel B: Portfolio characteristics						
Avg. # securities	3.12	1.00	1.53	60.88	4.44	2,262
Avg. % stocks	48.70	0.00	50.00	100.00	42.56	2,262
Avg. % bonds	31.91	0.00	4.44	100.00	40.54	2,262
Avg. % foreign exchange	13.44	0.00	0.00	100.00	28.21	2,262
Panel C: Trading characteristics						
Avg. # trades per month	0.78	0.00	0.50	16.22	1.03	2,262
Avg. % buys	54.21	0.00	50.00	100.00	22.55	2,225
Avg. % stock trades	51.21	0.00	58.82	100.00	41.84	2,225
Avg. % bond trades	30.33	0.00	4.44	100.00	39.65	2,225
Avg. % foreign exchange trades	13.36	0.00	0.00	100.00	27.42	2,225

The performance of stock sales

- Investors subject to money illusion buy less (sell more) stocks because they consider stocks to be overvalued.
- If investors do not suffer from money illusion and stocks are truly overvalued, real stock returns following stock sales should be negative, as stock prices return to their fundamental values.
- If investors suffer from money illusion and stocks are not overvalued, real stock returns following stock sales should not be negative.

Stock price data

- Berlin Stock Exchange Newspaper (*Berliner Börsen-Zeitung*)
- Monthly stock prices of 1,440 stocks between 1920 and 1924



Kurszettel der „Berliner Börsen-Zeitung" vom 30. Juni 1920. 3

(Die Dividenden lauten für 1919 resp. 1917/18 resp. 1918/19.) — • bedeutet, dass die Dividende auf den angegebenen Betrag festgesetzt, Termin der Auszahlung aber noch nicht bestimmt ist.

Aktien von Industriellen und Bergwerks-Ges.

	Div.17	Div.18	Div.19	Geschäftsj.	Stücke zu	heute	gestern
Auswärtige Brauereien							
Berl. Kindl-Br.	16	20	12	1/10	300 M	—.—	—.—
do. St.-Pr.	18	22	14	do.	1000 M	261 G	259 G
Böhm. Brauhaus	10	10	9	do.	200 fl	228 G	227 G
Bolle Weissbier	5	5	5	do.	1200. 200 M	—.—	—.—
Deutsche Bierbr.	8	8	7	do.	1000 M	133 bz	131 G
Engelhardt	15	15	15	do.	1000 M	238,50 bz	238 bz
Friedrichshain	6	5	6	do.	1200. 600 M	138 G	138 bz G
Germania	0	0	0	do.	1000 M	—.—	—.—
Königstadt	4	4	0	do.	15.12.300 M	75,50 bz G	—.—
Landré Weissb.	6	8	10	do.	200 fl	192 G	192 G
Löwenbrauerei	5	5	8	do.	1000 M	180,50 G	181 G
Patzenhofer	14	14	12	do.	1200. 1000. 300 M	215 bz G	217 bz
Schönebg. Schl.	6	6	4	do.	1000. 300 M	—.—	—.—
Schultheiss	16	16	14	1/9	12.10.300 M	242 bz G	239 G
Rixdorfer Brauereien							
Bochum. Victoria	9	9	12	1/8	1000 M	220 G	217 G
Braub. Nürnberg	9	9	9	1/10	1000 M	—.—	—.—
Brieger Stadtbr.	10	6	6	1/9	1000 M	221 bz G	215 G
Büchner, Erfurt	7	8	8	1/10	1000 M	—.—	—.—
Danziger Act.-Br.	8	8	6	do.	1000. 300 M	—.—	—.—
Dortm. Act.-Br.	20	20	20	do.	1200. 300 M	450 bz	—.—
do. Union	20	20	20	do.	1000. 300 M	450 bz G	—.—
do. Victoria	10	17	10	do.	1000. 500 M	—.—	—.—
Düsseld. Dieterich	16	10	12	1/11	1000 M	300 bz G	—.—
do. (Hoefel)	9	8	11	1/10	1000 M	201 G	199 G
Frankf. Henning	7	7	7	1/9	1000 M	—.—	—.—
Germania Dortm.	6	6	8	1/10	1000 M	—.—	—.—
Glückauf Gelsenk.	7	6	9	do.	1000 M	180 et bz G	—.—
Hanau Hofbrauh.	3	3½	6	do.	1000 M	—.—	—.—
Henninger Reifbr.	5	5	6	do.	1000 M	110 bz G	—.—
Hess. u. Hercules	8	8	8	do.	1000 M	160 bz G	—.—
Höcherbräu	8	8	17	do.	1000 M	—.—	—.—
Holsten	10	8	8	do.	1000 M	—.—	—.—
Hugger, Posen	8½	8½	8½	do.	1000 M	—.—	—.—
Isenbeck & Co.	5	5	0	do.	1000 M	—.—	—.—
Kieler Schlossbr.	6	6	6	do.	1000 M	—.—	—.—
König Br. Beeck	7	7	7	do.	1000 M	—.—	—.—
Kunterstein	8	8	8	do.	1000 M	—.—	—.—
Lgs. Br. Kiebeck	10	10	10	do.	1000 M	187 G	—.—
do. Verz.-Akt.	6	6	6	do.	1000 M	—.—	—.—
Lindener Brauer.	13	13	11	do.	1500 M	180 bz G	—.—
Löwenbr. Dortm.	10	10	10	do.	1000 M	—.—	—.—
Mersig Brauerei	5	7	10	do.	1000 M	—.—	—.—
Müser Langendr.	8	8	12	1/7	1000 M	—.—	—.—
Oberschlesische	7	9	—	1/1	1000 M	340 et bz G	—.—
Oppelner abg.	8	8	13	1/10	1000 M	205 bz G	—.—
Paulshöhe Spitta	4	4	5	do.	1000 M	—.—	—.—

	Div.17	Div.18	Div.19	Geschäftsj.	Stücke zu	heute	gestern
Chem. Fabr. Buckau	10	5	10	1/1	1000. 300 M	371 bz G	376 bz G
do. do. St.-Pr.	10	5	10	do.	1500 M	372 G	375 bz G
do. do. Griesheim	16	7	12	do.	1000 M	294 bz	290 et bz B
do. do. Grünau	12	10	12*	do.	1000 M	245 bz	251 bz
do. do. v. Heyden	25	16	16	do.	1000 M	302 bz	297 bz
do. do. Milch & Co.	12	22	0	1/11	1000 M	314 bz	307,50 bz
do. do. Weiler	12	10	12	1/1	1000 M	244 bz G	245 bz
do. Ind. Geisenkirch.	16	16	25	do.	1000 M	298 G	302 G
do. Werke Albert	30	20	30	do.	1000 M	581,50 bz	592 bz
Chems. W. Zimmerm.	20	20	0	1/7	100 fl	—.—	140 bz
Concordia, Bergbau	21	21	22	1/1	1000 M	407,75 bz G	406 bz
do. chem. Fabr.	6	10	8	1/7	1500. 1000 M	557,50 bz	555,25 G
do. Spinnerei	12	12	16	1/1	1000 M	200,50 G	200,50 bz
Consolidation Schalke	22	22	12	do.	1000 M	620 bz G	605 bz G
Cottbuser Maschinen	8	10	0	1/10	1000 M	145 bz	148 bz G
Crellwitzer Papierfb.	16	25	10	1/7	300 M	—.—	—.—
Daimler-Motoren	30	6	5	1/1	1000 M	208,50 bz	201 bz
Delmenh. Lin. (Anker)	14	10	6	do.	1000 M	254,75 bz	255 bz
Dessauer Gas-G.	11	10	—	1/11.D.1919	1200. 300 M	150 et bz G	150 G
Dtsch.-Atlant. Telegr.	3½	—	—	1/11.D.1918	1000 M	153,50 bz	153,50 bz G
Dt.-Luxemb. Bergw.	10	10	—	1/7	1000 M	269 bz	268,25 bz
Dt.-Niederl. Telegr.	6	—	—	1/11.D.1918	1000 M	190 bz	168,25 et bz G
Dt.-Südam. Tel. Ser. A.	5	—	—	do.	1000 M	195 bz	200,25 bz
Deutsch-Ueberseer. Kl.	0	0	0	1/1	1000 M	778 bz	795 bz G
do. Zert. d. D. Tr.-G.	—	—	—		fl	773 bz G	785 bz
do. do. Verz.-Akt.	6	6	6	do.	1000 M	150⅝ bz G	150⅝ G
do. Zert. d. D. Tr.-G.	—	—	—			150⅝ bz G	150⅝ bz G
Deutsche Asphalt-G.	0	0	4	do.	1000. 300 M	154 bz G	151 bz G
do. Babcock & Wilcox	12⅛	17½	12⅛	1/10	1000 M	—.—	—.—
do. Eisenb.-Signal	16	10	0	1/1	1000 M	—.—	—.—
do. Erdöl-Akt.-Ges.	25	20	45*	do.	1000 M	1050 bz G	1100 bz G
do. Gasglühl. LLiqu.	25	25	9	1/1.D.1919	1000 M	5000 G M p.St.	5000 G
do. do. Vorz.-Akt. B.	5	5	0	do.1.D.1919	1000 M	1050 G M p.St.	1050 G
do. Gussstahlkugel	25	15	6	1/9	1000 M	159 bz G	157,75 bz G
do. Jute-Spinnerei	36⅔	36⅔	25	1/1	1200. 600 M	391 bz	401 bz G
do. Kabelwerke	10	10	15	do.	1000 M	179,75 bz G	176 bz G
do. Kaliwerke	8	7	25*	do.	1000 M	392,50 bz G	407 bz
do. Kunstleder	10	10	14	do.	1000 M	164 bz	167,50 bz
do. Schachtbau	25	20	20	do.	1000 M	320 bz G	315 bz G
do. Spiegelglas	12	20	25	do.	200 fl	291 bz	280 bz
do. Steinzeug	20	12	0	do.	1000 M	191 G	191 G
do. Ton- u. Steinz.-W.	14	11	14	do.	1000. 600 M	205 bz G	209,50 bz
do. Waffen- u. Mun.	30	30	30	do.	1000 M	330,25 bz	331,50 bz
do. Wasserwerke	3	3	5	do.	1000 M	—.—	—.—
do. Wollw.-Manuf.	20	15	30	do.	1000 M	306,50 bz	305 bz G
Deutsch. Eisenb.-A.-G.	10	20⅝	15	do.	1000 M	190,50 bz	191,50 G
Dinnendahl	15	10	10	1/7	1000 M	164 bz	163 bz
Dittmann-Neuhaus	40	22	32	1/1	1000 M	—.—	483 G
Dommitzsch Thon	4	5	20*	1/4	500 M	220 G	220 G
Donnersmarckh. kv.	22	12	15	1/1	1200. 600 M	327 bz	329 bz
Düring & Lehrmann	0	5	6	do.	1000 M	138 bz	142,75 bz

	Div.17	Div.18	Div.19	Geschäftsj.	Stücke zu	heute	gestern
Hindrichs-Auffermann	25	25	18	1/7	1000 M	221 bz	220,25 bz G
Hirsch, Kupfer-W.	20	10	12	1/1	1000 M	248,75 bz	247 bz
Hirschberg, Lederf.	15	15	10*	do.	1000 M	276 G	276 G
Höchster Farbwerke	18	12	14	do.	1000 M	340,50 bz	347 bz
Hösch, Eisen u. Stahl	24	39	0	1/7	1500. 1000 M	330 bz G	328 bz G
Hoffmann, Stärkefab.	12	8	20	1/1	1000 M	210,25 bz	213 bz
Hohenlohewerke	8	0	—	1/4	1000 M	162 bz G	162 bz G
Horchwerke	15	15	6	1/11	1000 M	—.—	—.—
Hotelbetriebs-Ges.	6	8	15*	1/4	1000 M	263 bz	251 bz
do. 5% V.-A. kdb. 100	5	5	5*	do.	1000 M	110,50 G	110,50 G
Hotel Dtsch	0	0	0	1/1	1000 M	—.—	—.—
Hüxter-Godeih. Cem.	10	15	15	do.	1000 M	226 G	226 G
Hubertus Braunkohl.	9	9	12	do.	1000 M	360 bz	363 bz
Humboldt Masch.	8	9	5	1/7	1200. 600 M	160 bz G	159,75 bz
Humboldtmühle	10	10	10	do.	1000 M	296 G	296 G
Ludw. Hupfeld A.-G.	20	25	20	do.	1000 M	231 bz G	235 bz
C.M. Hutschenr., Hohk.	8	17	17	do.	1000 M	374 bz G	375,25 bz G
Hüttenw. Kayser & Co.	15	10	10	1/10	1000 M	177 bz G	180 bz G
Ilse, Bergbau	26	22	10	1/1	1000 M	315 bz G	315 bz
Industrietau A.-G.	15	15	15	do.	1000 M	199 bz	199 G
Jeserich, Asphalt abg.	10	12	24	do.	1000 M	244 G	248 G
do. Verz.-Akt.	5	6	12	do.	1000 M	111,75 bz	108 G
Johs. Akt.-Ges.	15	10	12	do.	1000 M	160 bz G	163 bz G
M. Jüdel & Co.	15	12	4*	do.	1000 M	211 bz	211 bz G
Jülich Zuckerfabrik	6	6	0	1/7	1000 M	163 bz	160 bz B
Kabla, Porzellanfab.	10	20	25	1/1	1000 M	373,25 bz	373,25 bz
Kahlbaum	24	25	25	1/10	1200. 300 M	1140 bz	1150 bz
Kaiser-Keller A.-G.	0	0	10	1/1	1000 M	165 bz G	160 bz G
Kaliw. Aschersleben	7	7	30	do.	1000 M	353 bz	358 bz G
Kalker Masch.-Fabr.	20	20	12	1/7	1000 M	305,25 bz	307 bz
Kammerichwerke	30	10	30	1/1	1000 M	328,50 bz	328 bz
Kandelhardt Auto	0	5	0	1/7	1000 M	—.—	—.—
Kapler Maschinen	7	6	6	1/1	1000 M	—.—	—.—
Kayserer Federstahl	12	18	25	do.	1000 M	257 bz G	255,25 bz
Kattowitzer Bergbau	12	0	—	1/4	1000 M	275 bz G	278 bz
Keula Eisenhütte	0	0	0	1/7	1000 M	140,25 bz G	140,50 bz
Keyling & Thomas	10	12	15	1/1	1000 M	265 G	260 bz G
Kirchner & Co.	20	40	4	1/7	1000 M	308,50 bz	312 B
Kleinbg. Terr. Breslau	0	0	0	1/1	1000 M	—.—	—.—
Kochs Adlernähmasch	12	12	18	do.	1000 M	257 bz B	257 bz
Köhlmann Stärkefab.	20	36⅔	18	1/10	1200. 300 M	380 B	380 B
Kohlendest. Düssd. LL	—	—	—	1/4D14/15	1000 M	—.—	—.—
Kolb & Schüle Buntw.	15	15	15	1/7	1000 M	214,50 G	214 bz G
Kollmar & Jourdan	23	23	25	1/5	1000 M	341 bz	344,75 B
Köln-Neuess. Bergw.	40	66⅔	15	1/1	1500. 1200. 600 M	693 bz G	691 bz G
Köln-Rottweil	20	15	16	do.	1200 M	262 bz G	249,75 bz
Köln. Gas u. Elektr.	0	0	0	do.	1000 M	107,25 bz	107 bz G
Kölsch Walzengiess.	14	22	12	1/7	1000 M	503 bz G	503 G
König Wilhelm konv.	20	12	12	1/1	1000. 600 M	516 bz	511 bz

Local inflation and the performance of stock sales

	Real return of stock sale$_{i,j,t+1,t+3}$			Real return of stock sale$_{i,j,t+1,t+6}$
	(1)	(2)	(3)	(4)
Local inflation$_{i,t}$	1.459*	1.656*	1.159	0.261
	(1.83)	(1.94)	(1.26)	(0.17)
Year-month fixed effects	Yes	Yes	Yes	Yes
Firm fixed effects	No	Yes	Yes	Yes
Client fixed effects	No	No	Yes	Yes
Adj. R^2	0.307	0.455	0.478	0.372
N	4,585	4,585	4,585	4,569

t-statistics are provided in parentheses.

Local inflation, firm leverage, and stock trades

	Buy-sell imbalance for individual stocks$_{i,j,t}$			
	(1)	(2)	(3)	(4)
Local inflation$_{j,t}$	-0.199	-0.189	-0.289	-0.239
	(-0.97)	(-0.91)	(-1.32)	(-1.35)
Δ Net leverage$_{j,t}$	0.162***	0.165***	0.155*	0.157**
	(3.07)	(2.78)	(1.89)	(2.34)
Local inflation$_{j,t}$ x Δ Net leverage$_{j,t}$	-0.122**	-0.135***	-0.129*	-0.112**
	(-2.29)	(-2.27)	(-1.98)	(-2.13)
Controls	Yes	Yes	Yes	Yes
Year-month fixed effects	Yes	Yes	Yes	No
Client fixed effects	No	Yes	Yes	No
Firm fixed effects	No	No	Yes	Yes
Client-year-month fixed effects	No	No	No	Yes
Adj. R^2	0.035	0.039	0.038	0.243
N	11,597	11,597	11,597	11,597

Controls: Log(assets), Profitability
t-statistics are provided in parentheses.

Additional robustness tests

- **Alternative measures for investor behavior**:
  - Buy-sell imbalance computed based on the value of stock trades
  - Log(portfolio value of stocks)

- **Alternative measures for local inflation**:
  - Raw local inflation
  - Log(local inflation)
  - Local inflation decile

Go to test

Do investors shy away from stocks because local inflation reveals information about gloomy economic prospects of firms?

1) **1920/1921**: Our results are similar when focusing on the time period from January 1920 to August 1922, when inflation was comparably low and the prospects of the German economy were good. Go to results
2) **Security level**: Our results are similar when we rerun our analysis on the client-security-month level (rather than at the client-level) and include security-year-month fixed effects that control for time-varying security characteristics, such as changes in cash flows and changes in the cost of capital. Go to results
3) **Major events**: Investors in low-inflation areas do not behave differently from investors in high-inflation areas around events that likely impacted economic prospects (e.g., invasion of the Ruhr by French and Belgian troops), suggesting that local inflation does not proxy for economic prospects. Go to results

Do investors shy away from stocks because local inflation increases their risk aversion?

1) **Low-volatility stocks vs. high-volatility stocks**: Our results are similar when we rerun our analysis separately for low-volatility stocks and high-volatility stocks. Go to results
2) **Major events**: Investors in low-inflation areas do not behave differently from investors in high-inflation areas around events that likely impacted investors' risk aversion (e.g., invasion of the Ruhr by French and Belgian troops), suggesting that local inflation does not proxy for risk aversion. Go to resuts

Do investors shy away from stocks to finance consumption?

1) **Bonds**: We find the relation between local inflation and buy-sell imbalances for bonds to be positive, suggesting that investors shift funds from stocks to bonds if inflation rises. Go to results
2) **Dividend income**: We find that clients are more likely to sell stocks if they receive dividends and experience high inflation, suggesting that clients do not sell because of consumption needs. Go to results

Do investors shy away from stocks because they invest in other asset classes that offer a hedge against inflation?

- **Foreign exchange**:
  1) **Strict regulations**: Foreign exchange was subject to strict regulations.
  2) **Foreign exchange**: We do not find a significant relation between local inflation and buy-sell imbalances for foreign exchange, suggesting that investors do not shift funds from stocks to foreign exchange. Go to results
  3) **Regulatory change**: Investors in low-inflation areas do not behave differently from investors in high-inflation areas around a regulatory change that affected the availability of foreign exchange, suggesting that investors do not reallocate funds from stocks to foreign exchange. Go to results
- **Real estate**:
  1) **Strict regulations**: Real estate was subject to strict regulations.
  2) **Regulatory change**: Investors in low-inflation areas do not behave differently from investors in high-inflation areas around a regulatory change that increased the attractiveness of real estate, suggesting that investors do not reallocate funds from stocks to real estate.

Local inflation and individual stock trades

	Buy-sell imbalance for individual stocks$_{i,j,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Local inflation$_{i,t}$	-0.364**	-0.570***	-0.614***	-0.514***		-0.492**
	(-2.10)	(-3.48)	(-3.90)	(-3.08)		(-2.44)
Local inflation$_{i,t-1,t}$					-0.296**	
					(-2.30)	
Occupied (d)$_{i,t}$						-0.312
						(-1.10)
Local unemployment rate$_{i,t}$						-7.510**
						(-2.30)
Year-month fixed effects	Yes	Yes	Yes	No	No	No
Client fixed effects	No	Yes	Yes	Yes	Yes	Yes
Security fixed effects	No	No	Yes	No	No	No
Security-year-month fixed effects	No	No	No	Yes	Yes	Yes
Adj. R^2	0.026	0.032	0.038	0.330	0.331	0.328
N	15,189	15,189	15,189	15,189	14,986	15,051

t-statistics are provided in parentheses.

Local inflation and stock trades around major events

	Buy-sell imbalance for $stocks_{i,t}$			
	(1)	(2)	(3)	(4)
Local $inflation_{i,Nov.-Apr.\ 1921}$ x Post reparations $(d)_t$	0.758			
	(0.72)			
Local $inflation_{i,Feb.-Jul.\ 1921}$ x Post Erzberger $(d)_t$		0.063		
		(0.07)		
Local $inflation_{i,Dec.\ 1921-May\ 1922}$ x Post Rathenau $(d)_t$			1.016	
			(0.95)	
Local $inflation_{i,Jul.-Dec.\ 1922}$ x Post Ruhr $(d)_t$				0.368
				(0.27)
Year-month fixed effects	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.032	0.062	0.068	0.068
N	1,337	1,367	1,629	3,204

t-statistics are provided in parentheses.

Local inflation and trades in low-volatility and high-volatility stocks

	Buy-sell imbalance for low-volatility stocks$_{i,t}$				Buy-sell imbalance for high-volatility stocks$_{i,t}$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Local inflation$_{i,t}$	-0.509	-0.912**		-0.992**	-0.811**	-0.792**		-0.733**
	(-1.21)	(-2.03)		(-2.09)	(-2.51)	(-2.14)		(-2.02)
Local inflation$_{i,t-1,t}$			-0.406				-0.383	
			(-0.96)				(-1.01)	
Occupied (d)$_{i,t}$				-0.887***				0.098
				(-7.14)				(1.43)
Local unemployment rate$_{i,t}$				1.616				-4.588
				(0.25)				(-0.56)
Year-month fixed effects	Yes	Yes	Yes	Yes	Yes	No	No	No
Client fixed effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Adj. R^2	0.047	0.046	0.045	0.046	0.062	0.022	0.023	0.021
N	2,269	2,269	2,233	2,249	2,602	2,602	2,558	2,567

t-statistics are provided in parentheses.

Local inflation and bond trades

	Buy-sell imbalance for $bonds_{i,t}$				Buy-sell imbalance for individual $bonds_{i,j,t}$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Local $inflation_{i,t}$	0.085	0.413		0.391	0.836*		1.134**
	(0.21)	(1.11)		(1.01)	(1.98)		(2.22)
Local $inflation_{i,t-1,t}$			0.473			0.759**	
			(1.66)			(2.56)	
Occupied $(d)_{i,t}$				0.579***			-0.147
				(7.84)			(-0.83)
Local $unemployment\ rate_{i,t}$				1.023			-0.176
				(0.23)			(-0.03)
Year-month fixed effects	Yes	Yes	Yes	Yes	No	No	No
Client fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Security-year-month fixed effects	No	No	No	No	Yes	Yes	Yes
Adj. R^2	0.026	0.065	0.075	0.068	0.424	0.433	0.424
N	4,406	4,406	4,321	4,296	5,191	5,056	5,056

t-statistics are provided in parentheses.

Local inflation, dividend payments, and stock trades

	Buy-sell imbalance for stocks$_{,t}$				Buy-sell imbalance for individual stocks$_{i,j,t}$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Local inflation$_{i,t}$	-0.533**	-0.637**		-0.533*	-0.507***		-0.488**
	(-2.49)	(-2.58)		(-2.02)	(3.01)		(-2.40)
Local inflation$_{i,t-1,t}$			-0.344**			-0.287**	
			(-2.50)			(-2.20)	
Dividend (d)$_{i,t}$	0.105***	0.121***	0.120***	0.126***	0.075***	0.080***	0.076***
	(4.01)	(7.02)	(6.69)	(5.52)	(4.07)	(0.417)	(4.11)
Local inflation$_{i,t}$ ×Dividend (d)$_{i,t}$	-0.060***	-0.061***		-0.065**	-0.043		-0.043
	(-2.88)	(-2.53)		(0.23)	(-1.26)		(-1.26)
Local inflation$_{i,t-1}$ ×Dividend (d)$_{i,t}$			-0.35**			-0.027	
			(-2.09)			(-1.30)	
Controls	No	No	No	Yes	No	No	Yes
Year-month fixed effects	Yes	Yes	Yes	Yes	No	No	No
Client fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Security-year-month fixed effects	No	No	No	No	Yes	Yes	Yes
Adj. R^2	0.037	0.037	0.036	0.039	0.331	0.331	0.330
N	8,057	8,057	7,961	7,962	15,189	14,986	15,051

Controls: Occupied (d)$_{i,t}$, Local unemployment rate$_{i,t}$. t-statistics are provided in parentheses.

Local inflation and trades in securities denominated in foreign exchange

	Buy-sell imbalance for foreign exchange$_{i,t}$				Buy-sell imbalance for individual foreign exchange$_{i,j,t}$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Local inflation$_{i,t}$	-0.301	-0.486		-0.501	-0.937		-0.966
	(-0.50)	(-0.50)		(-0.52)	(-1.12)		(-1.15)
Local inflation$_{i,t-1,t}$			0.214			-0.461	
			(0.30)			(-0.56)	
Occupied (d)$_{i,t}$				-0.645*			0.000
				(-1.97)			(0.00)
Local unemployment rate$_{i,t}$				2.334			6.313
				(0.23)			(0.52)
Year-month fixed effects	Yes	Yes	Yes	Yes	No	No	No
Client fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Security-year-month fixed effects	No	No	No	No	Yes	Yes	Yes
Adj. R^2	0.060	-0.058	-0.062	-0.061	0.194	0.197	0.196
N	1,868	1,868	1,837	1,855	1,550	1,527	1,542

t-statistics are provided in parentheses.

Local inflation and stock trades around regulatory changes

	Buy-sell imbalance for $stocks_{i,t}$	
	(1)	(2)
$Local\ inflation_{i,Apr.-Sep.\ 1921}$ x Post Forex $(d)_t$	1.032	
	(0.96)	
$Local\ inflation_{i,Sep.\ 1921-Feb.\ 1922}$ x Post housing $(d)_t$		-0.348
		(-0.55)
Year-month fixed effects	Yes	Yes
Client fixed effects	Yes	Yes
Adj. R^2	0.083	0.029
N	2,212	1,630

t-statistics are provided in parentheses.

Local inflation and stock trades – additional robustness tests

	Buy-sell imbalance for stocks$_{i,t}$			Buy-sell imbalance for stocks$_{i,t}$ (set to zero in months with no trades)	Buy-sell imbalance for stocks$_{i,t}$ (based on value of trades)	Log(portfolio face value of stocks)$_{i,t}$
	(1)	(2)	(3)	(4)	(5)	(6)
Raw local inflation$_{i,t}$	-0.024***					
	(-3.07)					
Log(local inflation)$_{i,t}$		-0.770**				
		(-2.64)				
Local inflation decile$_{i,t}$			-0.017**			
			(-2.39)			
Local inflation$_{i,t}$				-0.137**	-0.591**	-0.731***
				(-2.49)	(-2.60)	(-3.05)
Year-month fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.035	0.036	0.035	0.019	0.025	0.666
N	8,057	8,057	8,057	36,175	8,057	36,175

t-statistics are provided in parentheses.