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Macroeconomic debt crises, an overview

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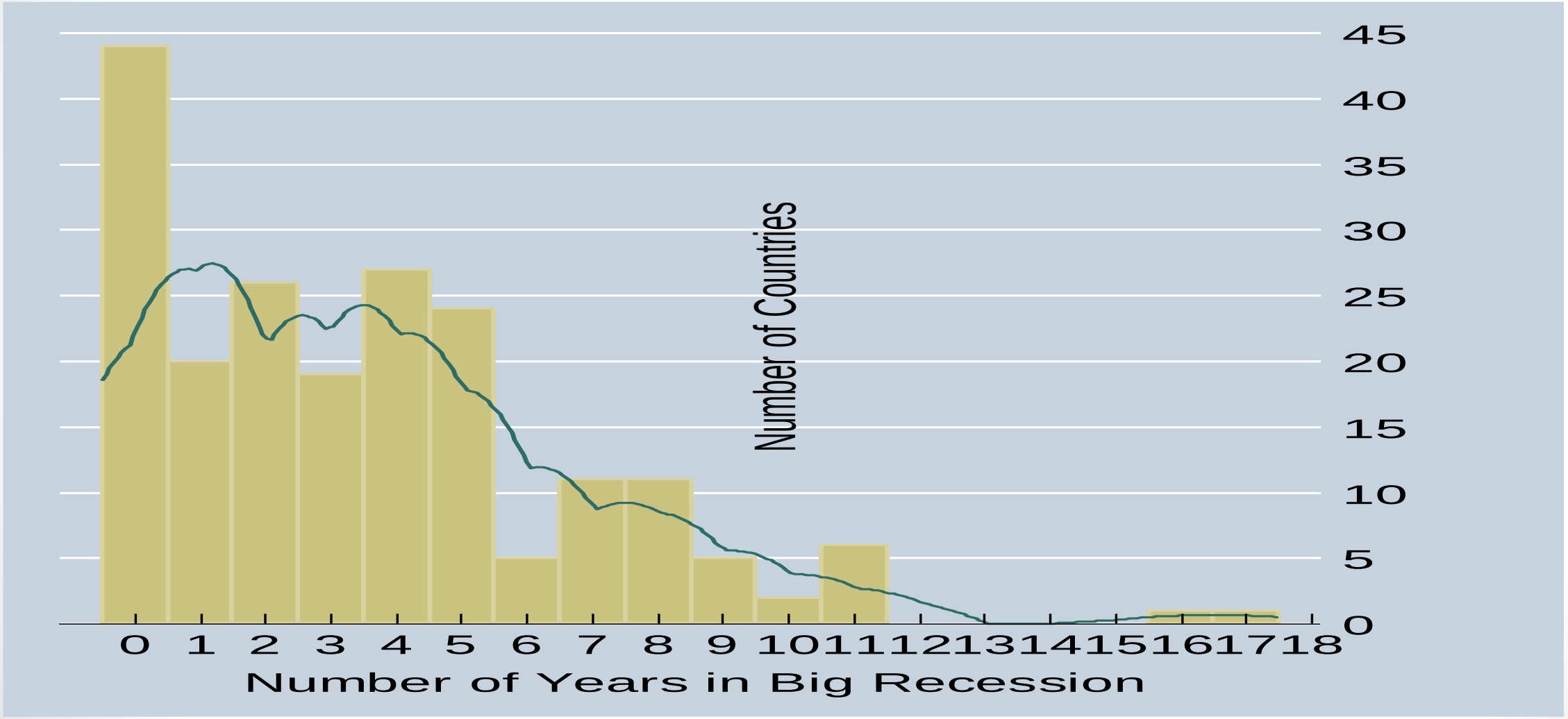
Big Recessions

A family of events

- Big recessions not uncommon in recent history.
- Majority of economies showed declines in GDP over 5% since 1970.
- A substantial number of countries had two or more episodes.

Distribution of Events by Country

Distribution of Number of Years by Countries

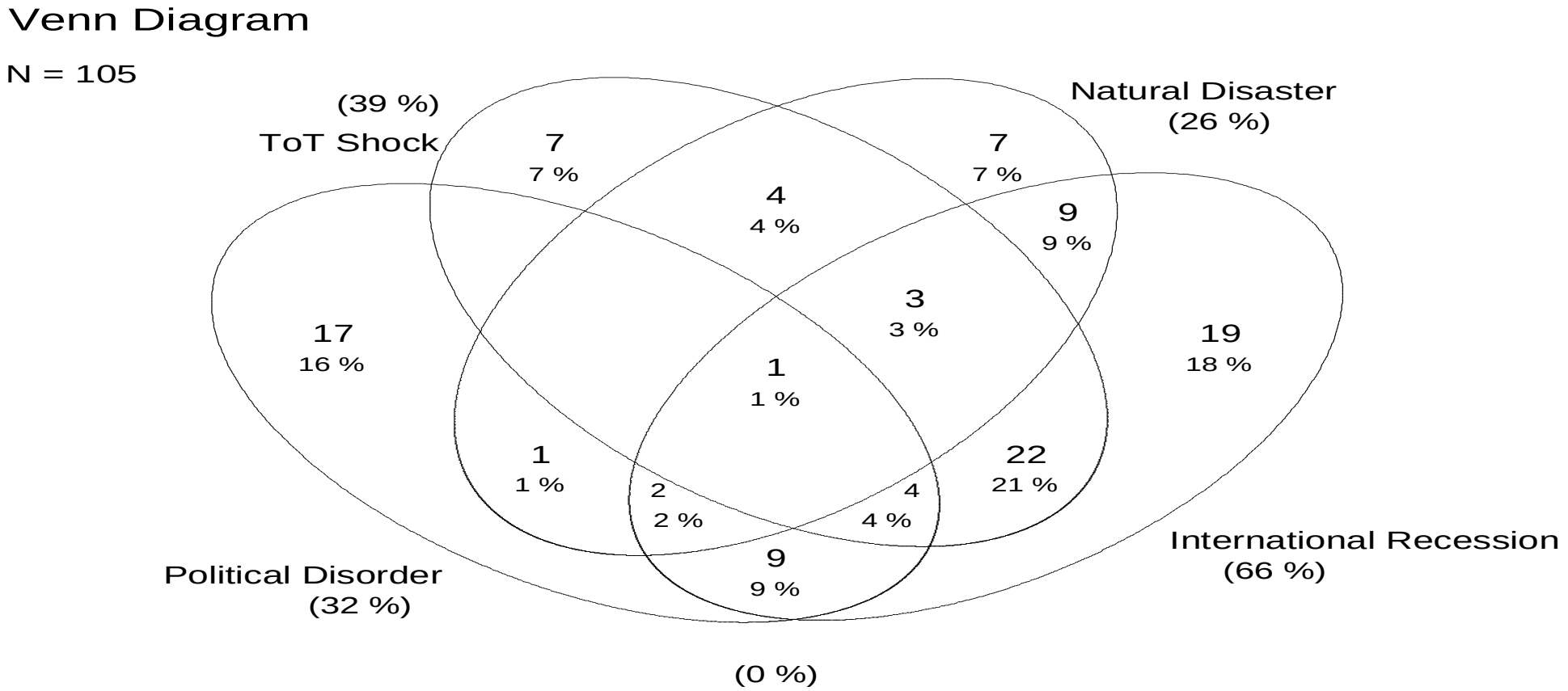


A family of events

- Big recessions (BR) heterogeneous episodes, but discernible subsets.

- Substantial number of cases: strong real shocks, without conventionally defined “financial crises” (banking troubles, stock market crashes, steep devaluations, sovereign defaults):
  - Systemic transitions
  - Natural disasters
  - Major political disturbances
  - Big ToT losses and/or international recession

A family of events
Big recessions, no crisis



A family of events

- Small or low-income economies, on the whole, specificities due to sensitivity to outside shocks.

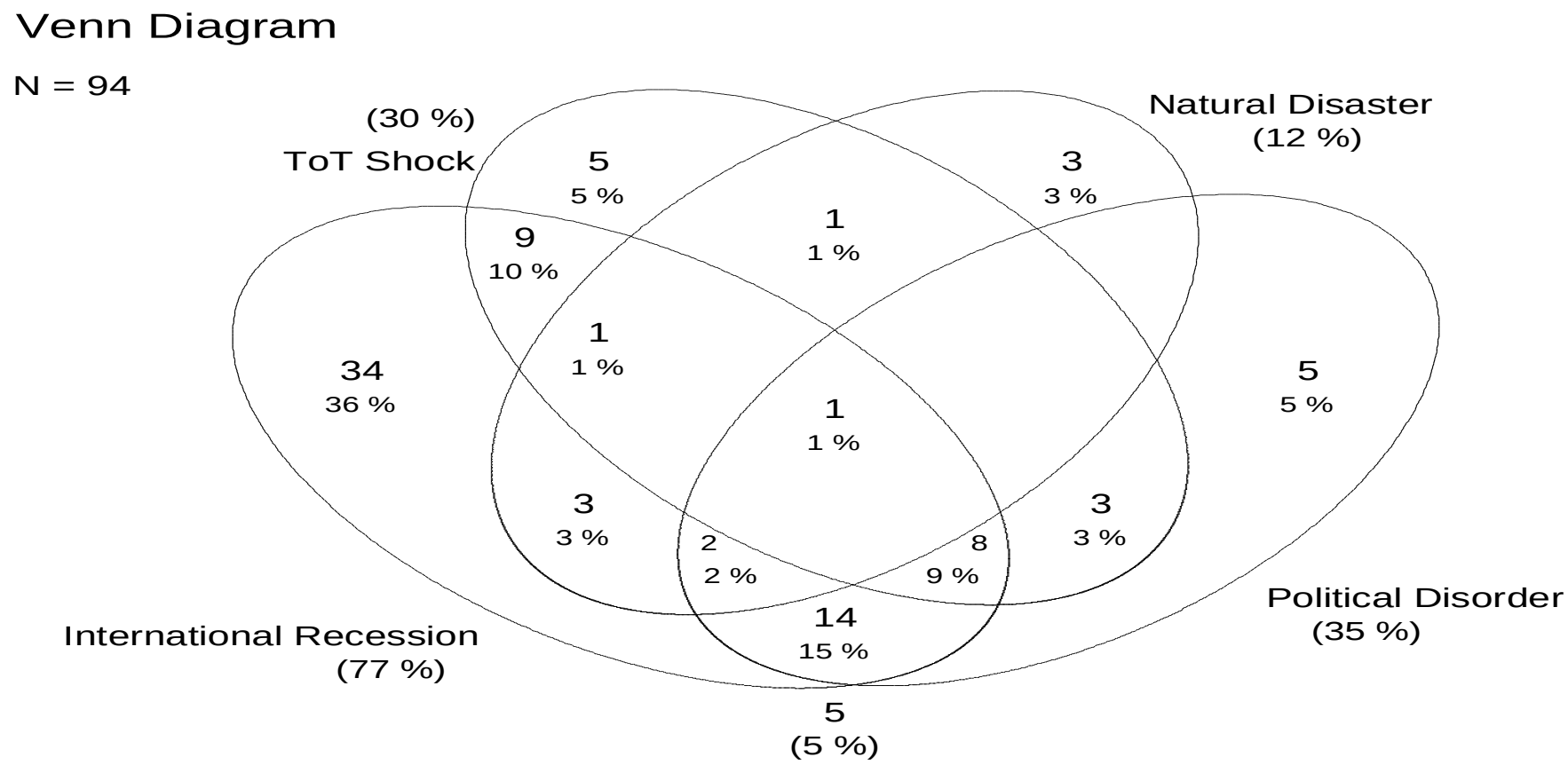
- Transitions also particular cases, even if crises present.

A family of events

- Leaving aside those instances, group of episodes where financial/debt disruptions seem central components of output contractions.

- (But note: banking crises, conventionally defined, not necessarily associated with big recessions: 30% exceptions in NSLIT economies).

A family of events
Big recessions, SLIT crisis

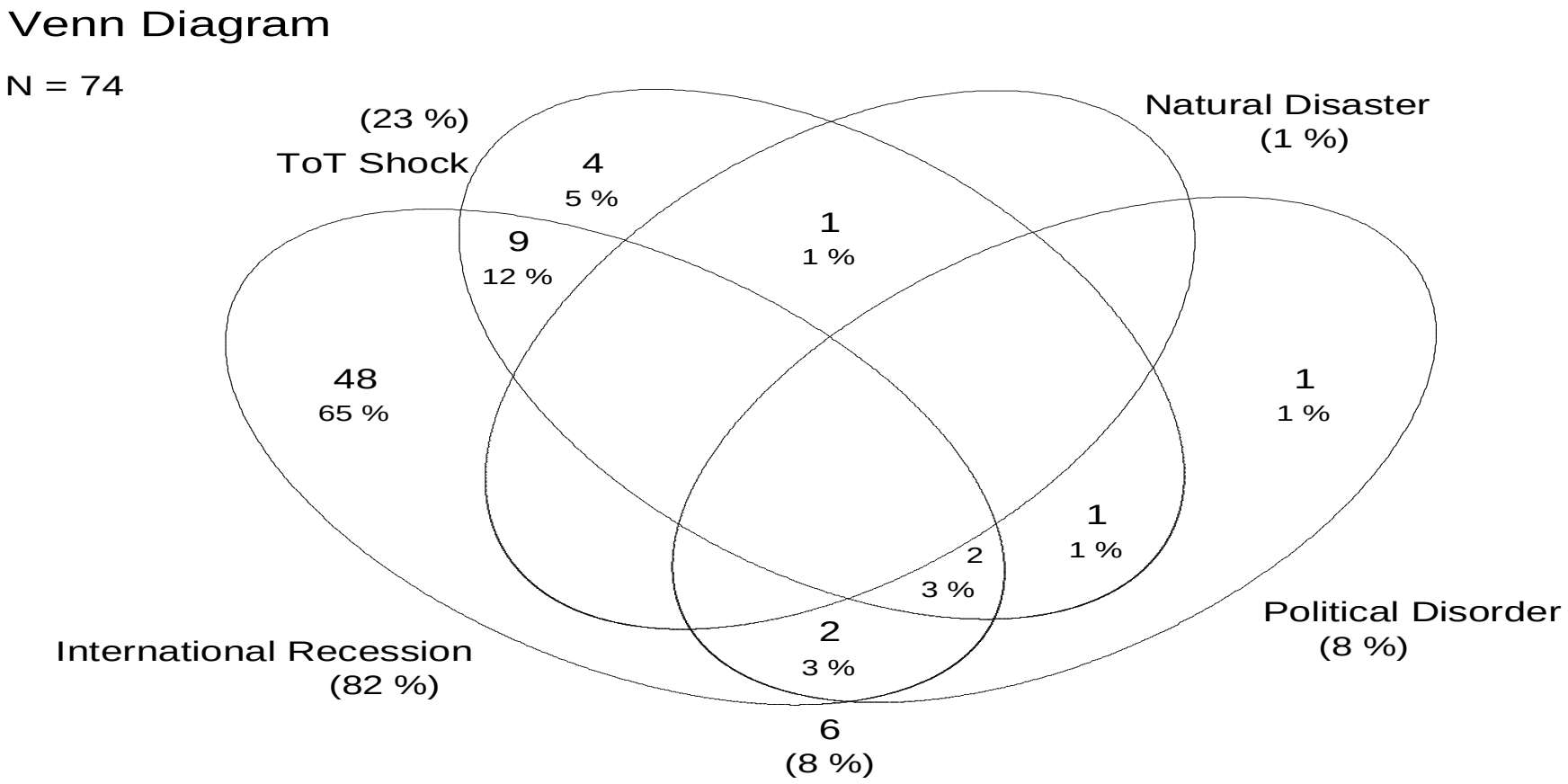


A family of events
Big recessions, NSLIT crisis

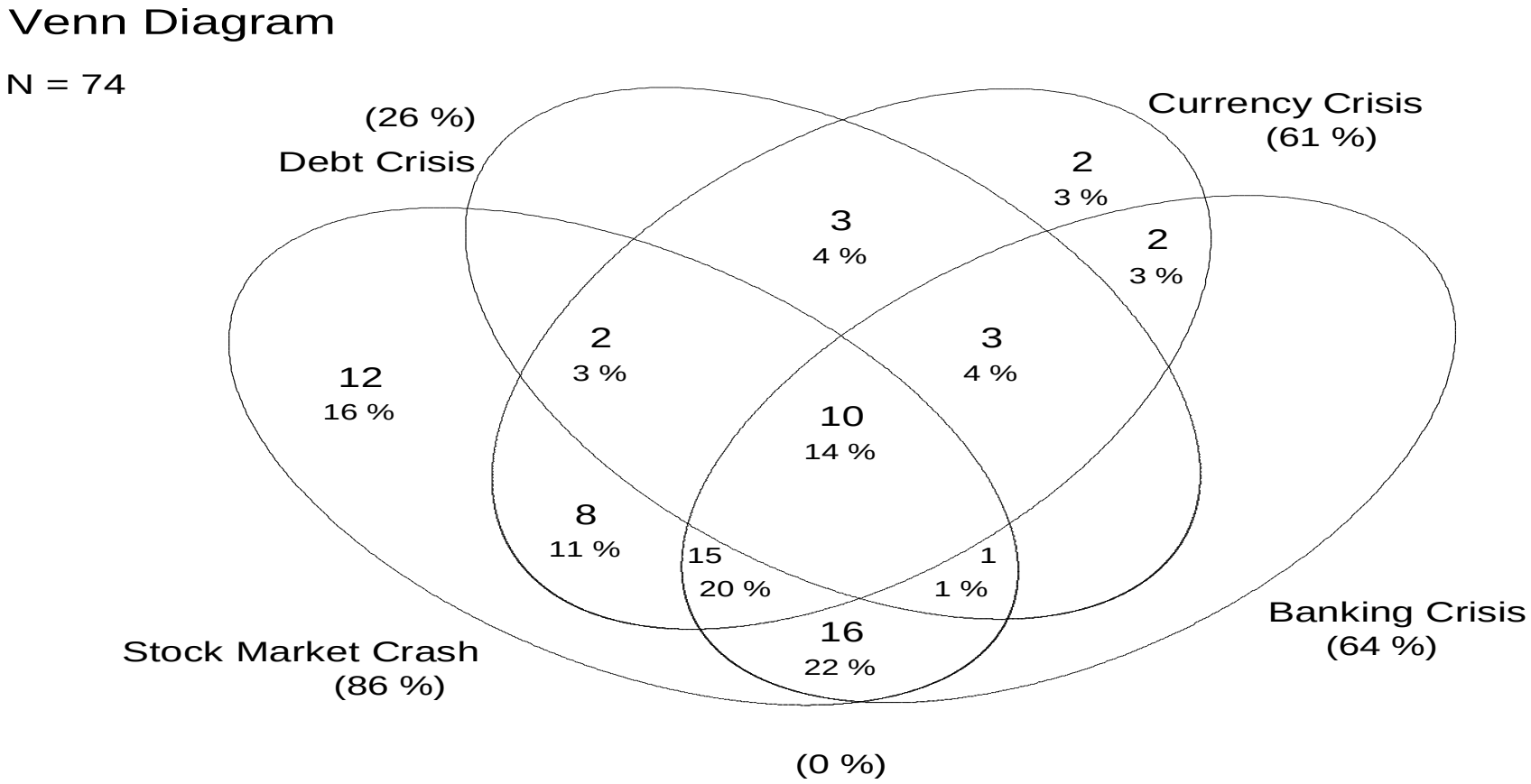
- The remaining set includes historically salient events such as:

  - LATAM in the 1980s (with the particularity of featuring high inflations in most cases).
  - Sweden/ Finland in early 1990s.
  - “Emerging economies” in late 1990s, early 2000s, among them Asian crises.
  - Recent global crises and recessions: majority of big recessions in wealthier countries.
  - “Off sample”, large- scale episodes, like Great Depression or Japanese “balance sheet recession” (although characterized more by length than depth of contraction).

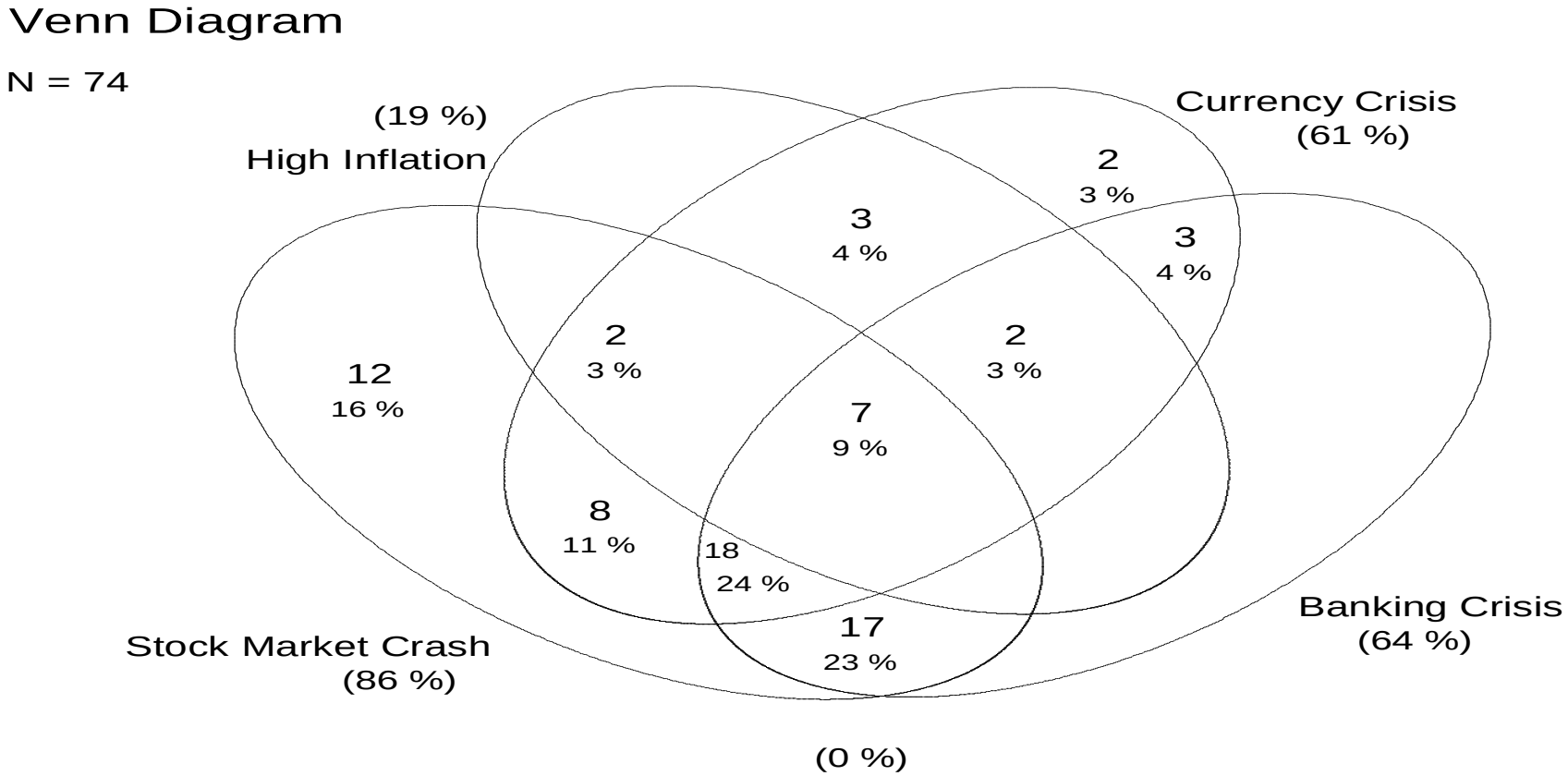
A family of events
Big recessions, NSLIT crisis



A family of events
Big recessions, NSLIT crisis



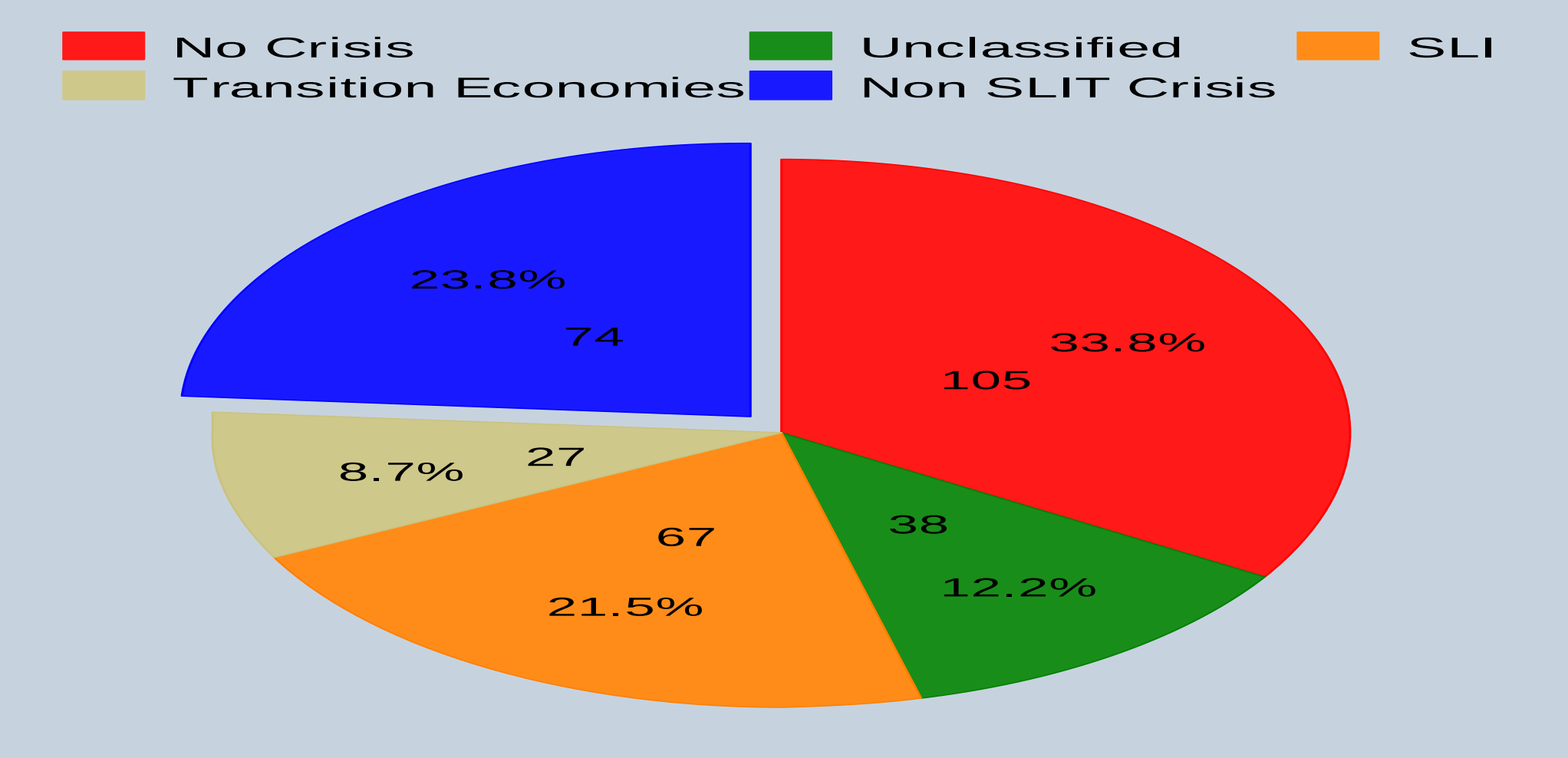
A family of events
Big recessions, NSLIT crisis



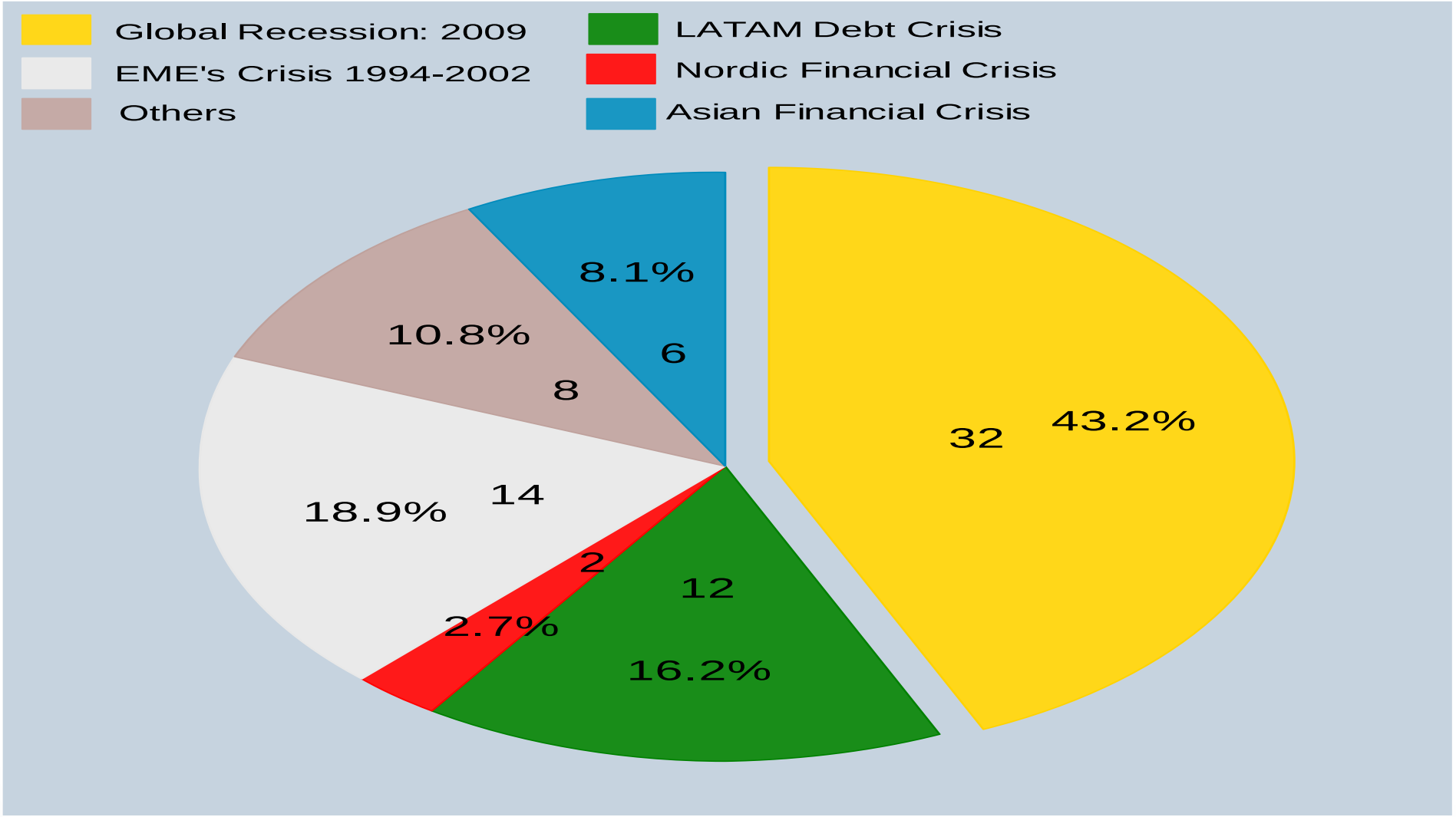
Types of Crisis by Classification

Type of Big Recession	Episodes	Stock Market Crash	Banking Crisis	Currency Crisis	Sovereign Debt Crisis	High Inflation	Natural Disaster	Transition	ToT Shock	Political Disorder	International Recession	Total
1. No Crisis	105	0	0	0	0	1	27	1	41	34	69	173
2.Transition	27	2	16	7	6	24	0	27	3	0	27	112
3.Low Income Economies	47	2	21	12	27	5	6	0	15	27	32	147
4. Lower Middle Income Economies	13	1	7	9	9	1	4	0	7	6	8	52
5.Small High Income Countries	7	1	2	1	5	0	1	0	3	0	5	18
6. SLIT Crisis (2+3+4+5)	**94**	**6**	**46**	**29**	**47**	**30**	**11**	**27**	**28**	**33**	**72**	**329**
7. No Crisis + SLIT (1+6)	**199**	**6**	**46**	**29**	**47**	**31**	**38**	**28**	**69**	**67**	**141**	**502**
8. LATAM Debt Crisis	**12**	8	9	11	11	8	0	0	7	2	10	66
9. Nordic Financial Crisis	**2**	2	2	2	0	0	0	0	0	0	2	8
10. Asian Financial Crisis	**6**	6	6	4	1	0	0	0	0	0	6	23
11. EME's Crisis 1994-2002	**14**	9	11	13	5	3	1	0	4	1	6	53
12.Global Recession: 2009	**32**	32	18	10	0	0	0	0	2	0	32	94
13. Others	**8**	7	1	5	2	3	0	0	4	3	5	30
14. Non-SLIT Crisis	**74**	**64**	**47**	**45**	**19**	**14**	**1**	**0**	**17**	**6**	**61**	**274**
15. SLIT + Non-SLIT Crisis (6+14)	**168**	**70**	**93**	**74**	**66**	**44**	**12**	**27**	**45**	**39**	**133**	**603**
16. No Crisis + SLIT + Non-SLIT	**273**	**70**	**93**	**74**	**66**	**45**	**39**	**28**	**86**	**73**	**202**	**776**
No Crisis - No Data	38	.	.	.	.	.	.	.	.	.	.	0
Total	**311**											

A family of events



A family of events



A family of events

- Heterogeneites in several dimensions:
  - Economies large and small, central and peripheral, rich and less rich.
  - Financial systems with different sizes, configurations, sophistication of assets; debt denomination.
  - Varieties of monetary, exchange regimes and policies.
  - Capital inflows pre- crisis, not always.
  - Government or twin deficits, sometimes

Crises and Big Recessions: heterogeneities

Population

Population in 1990. Non-SLIT Episodes.

Type	Min	Mean	Median	Max
Banking Crisis	0,30	36,80	14,95	249,62
Currency Crisis	0,30	37,58	21,70	179,00
Sovereign Debt Crisis	3,10	46,49	32,60	179,00
Stock Market Crisis	0,30	34,31	13,20	249,62
High Inflation	6,70	37,64	27,90	149,70
Natural Disaster	19,80	19,80	19,80	19,80
Political Disorder	2,10	13,85	11,70	32,60
ToT Shock	2,10	28,04	19,80	148,30

Type of Crisis	Low Population		High Population	
Banking Crisis	Iceland (2008)	0,30	Russia (1998)	148,30
Stock Market Crash	Estonia (2008)	1,60	Japan (2008)	123,50
Currency Crisis	Uruguay (1999)	3,10	United Kingdom (2008)	57,20
Sovereign Debt Crisis	Ecuador (1999)	10,30	Indonesia (1998)	179,00
High Inflation	Bulgaria (1996)	8,70	Turkey (1994)	54,10

Crises and Big Recessions: heterogeneities

Per capita income

GDP per capita PPP at 1990. Non-SLIT Episodes.

Type	N	Min	Mean	Median	Max
Banking Crisis	47	2.073	13.317	9.574	32.965
Currency Crisis	45	2.073	9.173	7.458	25.630
Sovereign Debt Crisis	19	2.073	6.932	7.175	12.626
Stock Market Crisis	63	2.073	13.504	9.990	32.965
High Inflation	14	3.074	6.833	7.458	9.990
Natural Disaster	1	9.574	9.574	9.574	9.574
Political Disorder	6	3.910	8.097	7.022	17.325
ToT Shock	18	3.074	7.860	7.656	12.626

Type of Crisis	Low GDP pc		High GDP pc	
Banking Crisis	Indonesia (1998)	2.073	United States (2008)	32.965
Stock Market Crash	Albania (1997)	3.910	Germany (2008)	25.881
Currency Crisis	Thailand (1997)	3.933	Sweden (1991)	24.568
Sovereign Debt Crisis	Bolivia (1982)	3.074	Russia (1998)	12.626
High Inflation	Peru (1988)	4.477	Mexico (1982)	9.990

Crises and Big Recessions: heterogeneities

Monetary and Financial variables

M2/GDP (%) at T-1. 42 GR, All Non-SLIT Episodes.

More than 1% and <25%		>25% and <50%		>50% and <100%		More than 100%	
Argentina (1985)	*12,4%*	*Turkey (1994)*	*25,2%*	*Indonesia (1998)*	*50,4%*	*Italy (2008)*	*105,1%*
Argentina (1988)	*15,2%*	*Chile (1982)*	*26,8%*	*Finlandia (1991)*	*53,4%*	*Malaysia (1998)*	*116,8%*
Brazil (1981)	*18,5%*	*Argentina (1999)*	*27,3%*	*USA (2008)*	*77,6%*	*France (2008)*	*133,2%*
Venezuela (2002)	*18,7%*	*Mexico (1995)*	*27,6%*	*Thailand (1997)*	*81,2%*	*Hong Kong (1998)*	*166,1%*
Argentina (1981)	*19,3%*	*Mexico (1982)*	*28,7%*	*Greece (2008)*	*93,0%*	*Japan (1992)*	*184,3%*
Venezuela (1999)	*19,4%*	*Uruguay (1999)*	*32,5%*	*Iceland (2009)*	*93,9%*	*Germany (2009)*	*188,1%*
Peru (1988)	*19,4%*	*Venezuela (1980)*	*32,8%*			*Spain (2009)*	*194,2%*
Ecuador (1999)	*20,0%*	*Colombia (1999)*	*33,0%*			*Austria (2009)*	*197,3%*
Peru(1982)	*20,4%*	*Turkey (2001)*	*34,5%*			*Netherlands (2009)*	*198,5%*
Paraguay (1982)	*23,8%*	*Venezuela (1989)*	*34,5%*			*Japan (2008)*	*201,5%*
Paraguay (1999)	*24,2%*	*Uruguay (1982)*	*38,0%*			*Ireland (2008)*	*227,7%*
		South Korea (1998)	*38,9%*				
		Sweeden (1991)	*44,6%*				
		Turkey (2009)	*48,6%*				
26%		**33%**		**14%**		**26%**	

Crisis y grandes recesiones: heterogeneidades

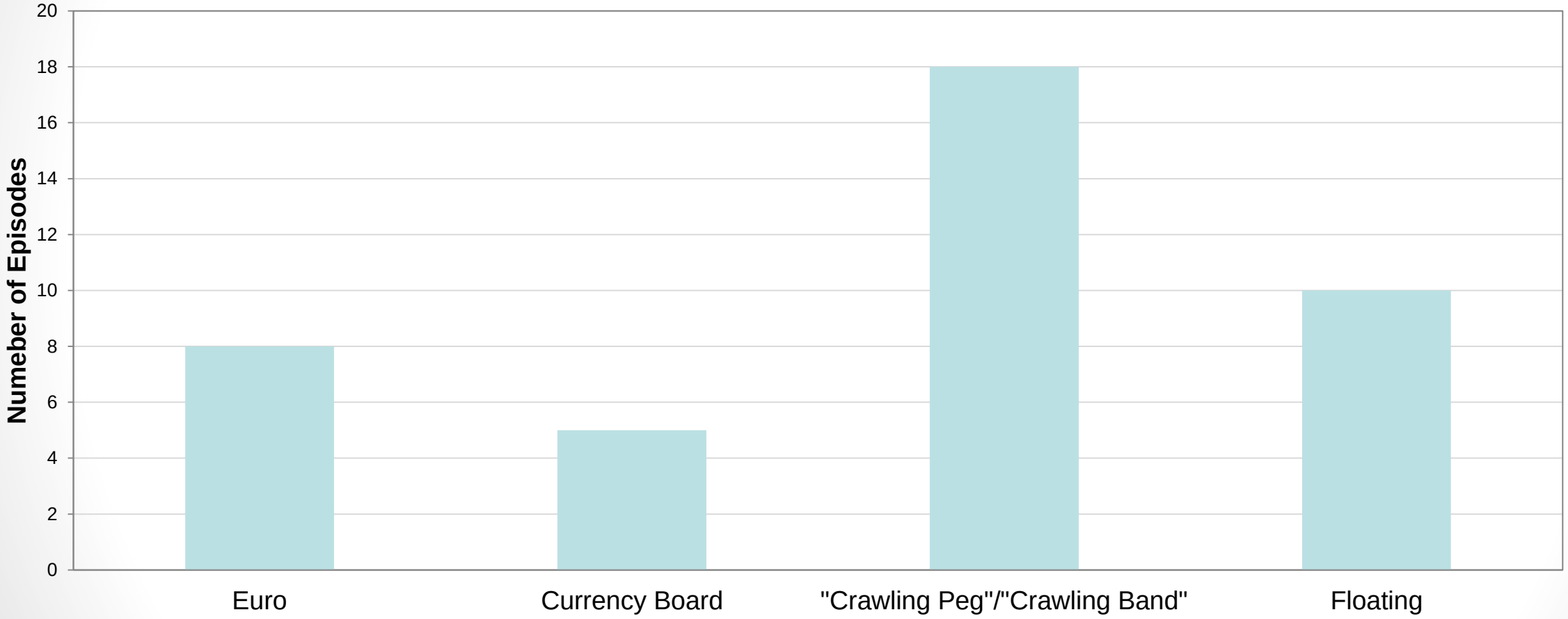
Monetary and Financial variables

Market capitalization of listed companies (% of GDP) at T-1. 31 GR, All Non-SLIT Episodes.

More than 1% and <25%		>25% and <50%		>50% and <100%		More than 100%	
Uruguay (1999)	*0,8%*	*Turkey (2001)*	*26,1%*	*Italy (2008)*	*50,7%*	*Japan (2008)*	*101,7%*
Venezuela (1989)	*3,1%*	*Germany (2009)*	*30,6%*	*Thailand (1997)*	*54,9%*	*France (2008)*	*107,3%*
Paraguay (1999)	*3,5%*	*Mexico (1995)*	*30,8%*	*Ireland (2008)*	*55,6%*	*USA (2008)*	*142,5%*
Venezuela (2002)	*5,1%*	*Iceland (2009)*	*33,0%*	*Spain (2009)*	*59,4%*	*Hong Kong (1998)*	*233,1%*
Ecuador (1999)	*5,8%*	*Sweden (1991)*	*40,0%*	*Greece (2008)*	*85,2%*		
Venezuela (1999)	*8,3%*	*Netherlands (2009)*	*44,5%*	*Japan (1992)*	*89,8%*		
South Korea (1998)	*8,9%*			*Malaysia (1998)*	*93,5%*		
Indonesia (1998)	*13,5%*						
Colombia (1999)	*13,6%*						
Argentina (1999)	*15,2%*						
Turkey (2009)	*16,1%*						
Finlandia (1991)	*16,3%*						
Austria (2009)	*17,5%*						
Turkey (1994)	*20,8%*						
45%		**19%**		**23%**		**13%**	

Crises and Big Recessions: heterogeneities

Currency Regimes



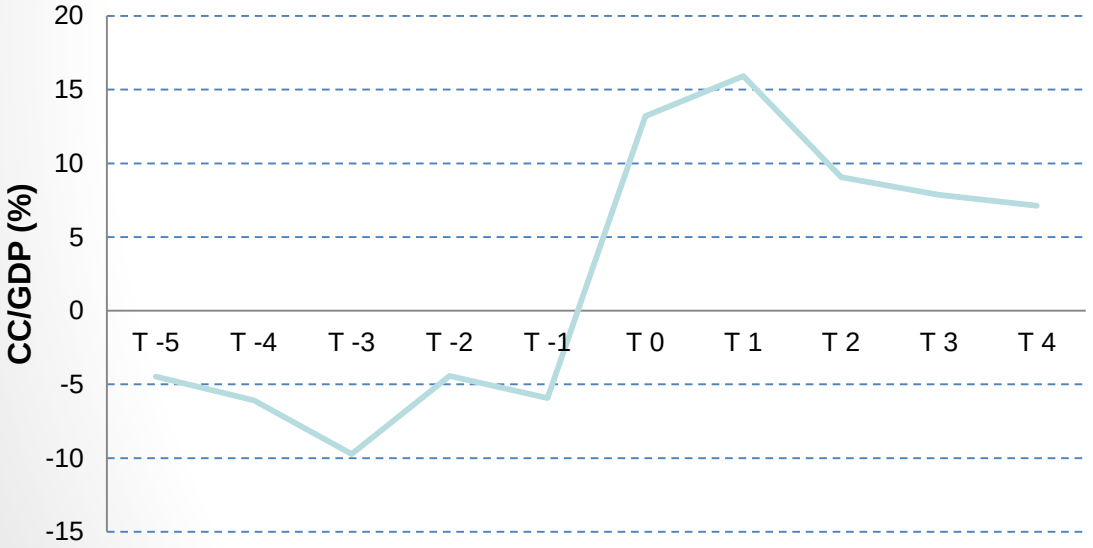
Nº of Episodes=41, Currency Regime at T-1

Crises and Big Recessions: heterogeneities

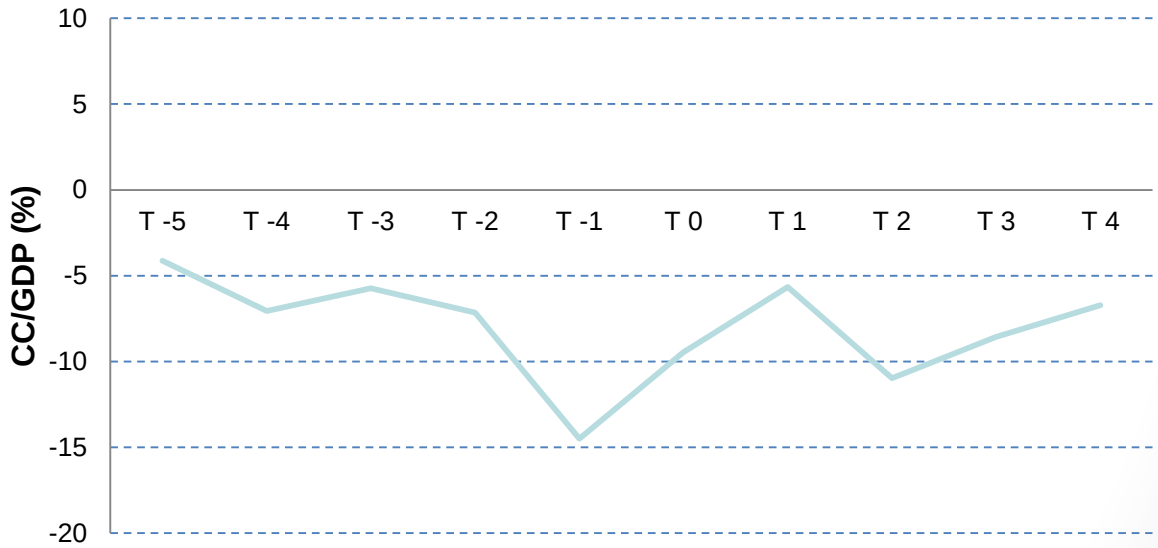
Current Account

CA deficits pre-GR

Malaysia 1998



Chile 1982-83

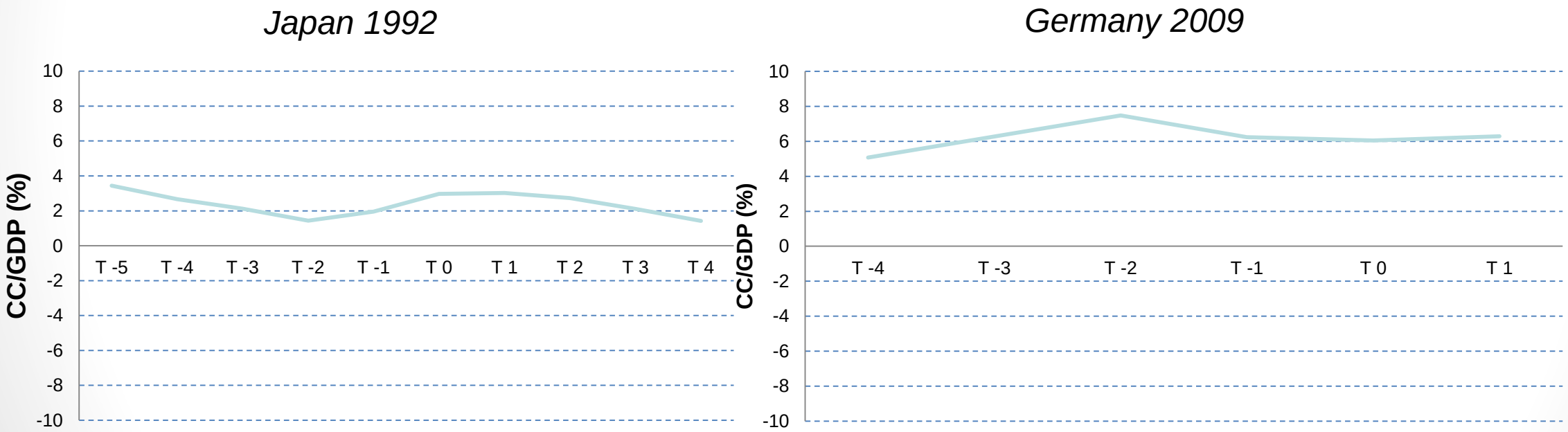


Other examples: *Greece 2008-14?, Spain 2009-14?, Argentina 1999-2002, Argentina 1981-83, Brazil 1981-82, Indonesia 1998.*

Crises and Big Recessions: heterogeneities

Current Account

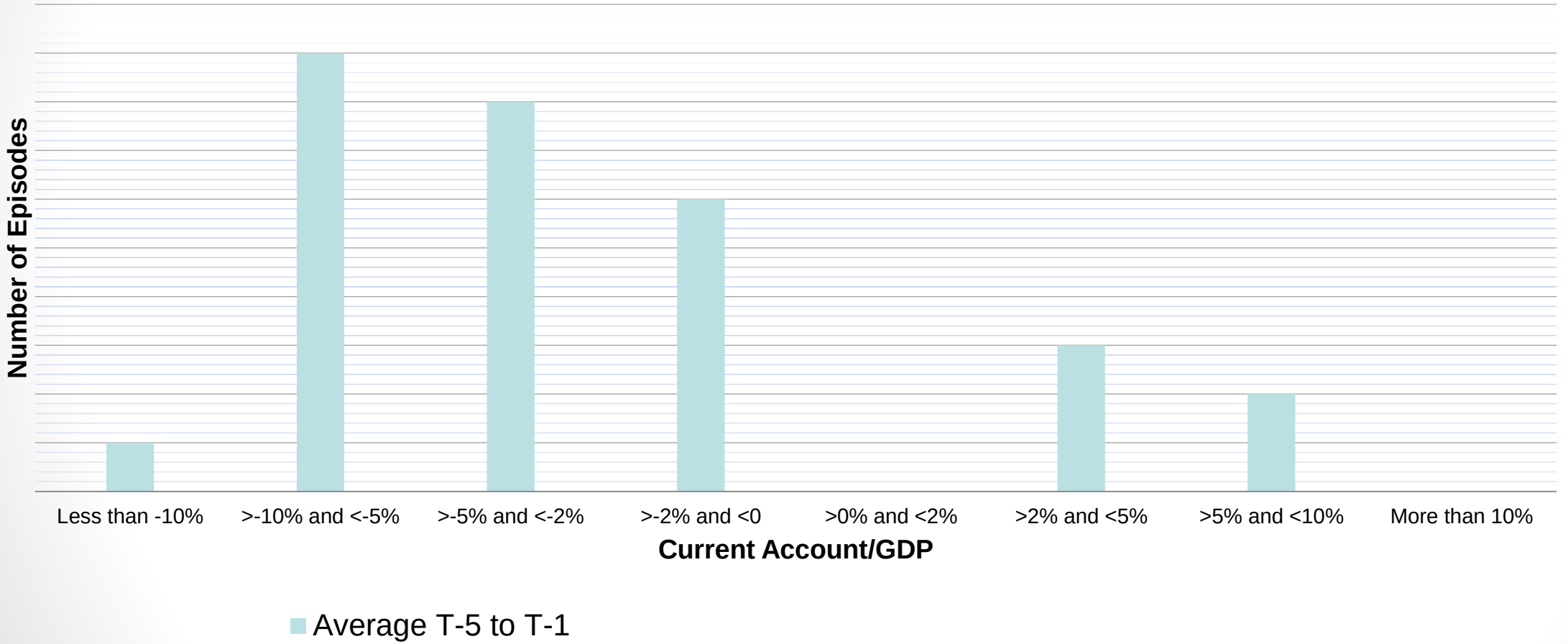
CA surpluses



Other examples: *Netherlands 2009, Japan 2008-09, Austria 2009*

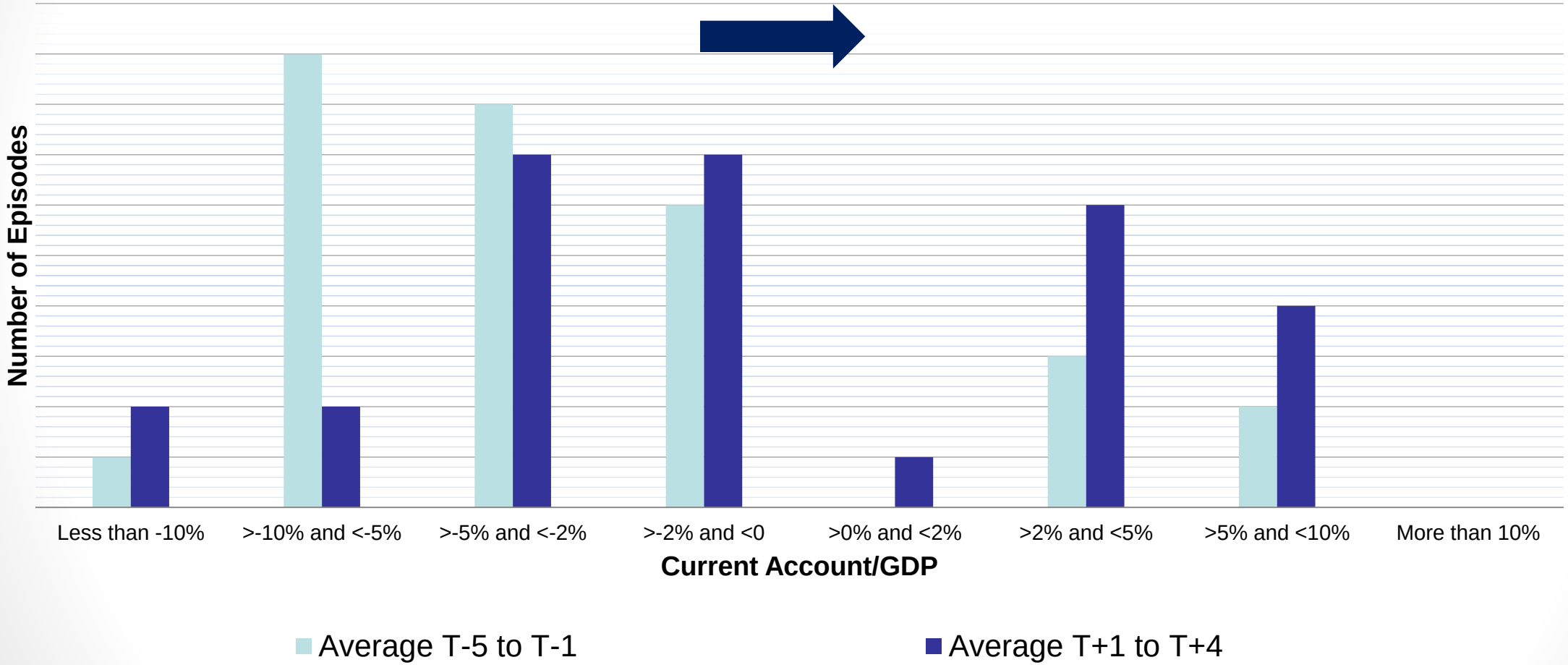
Crises and Big Recessions: heterogeneities

Current Account



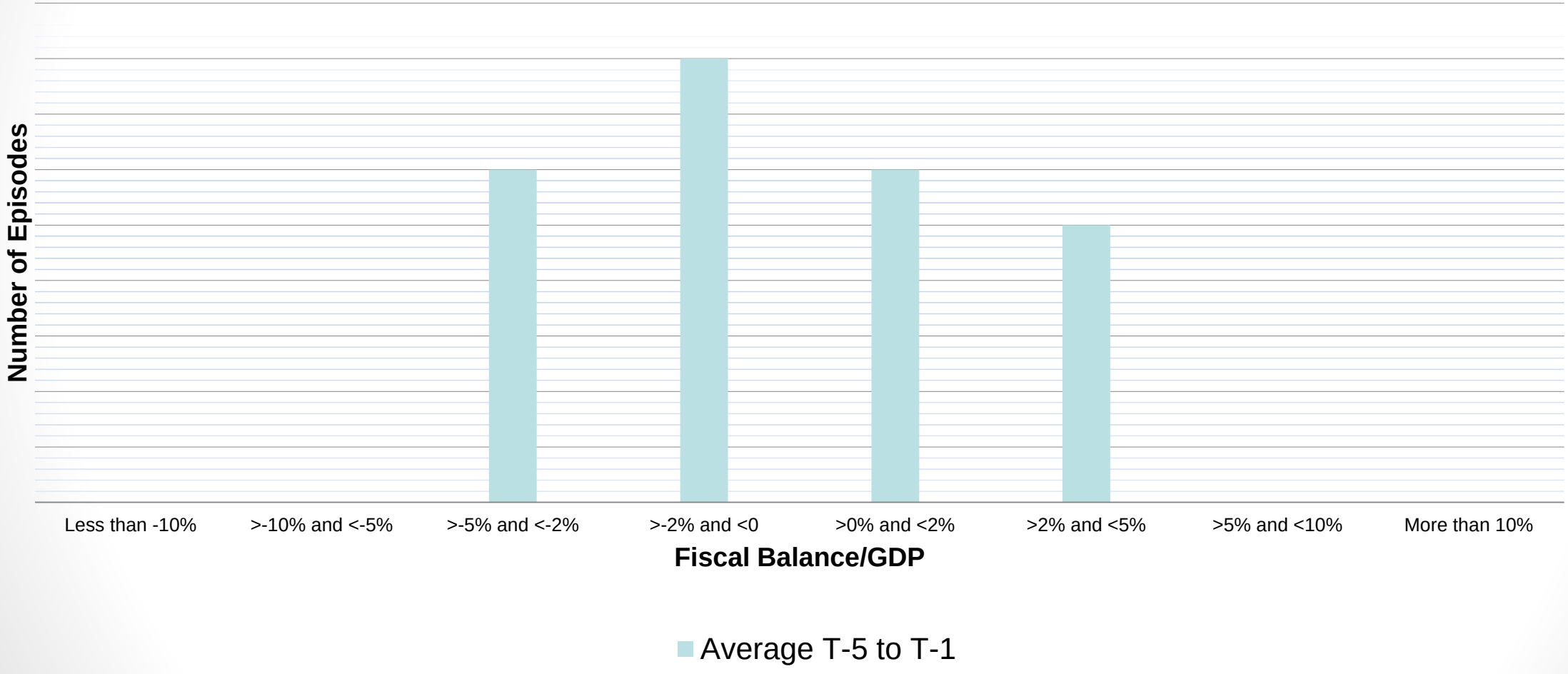
Crises and Big Recessions: heterogeneities

Current Account



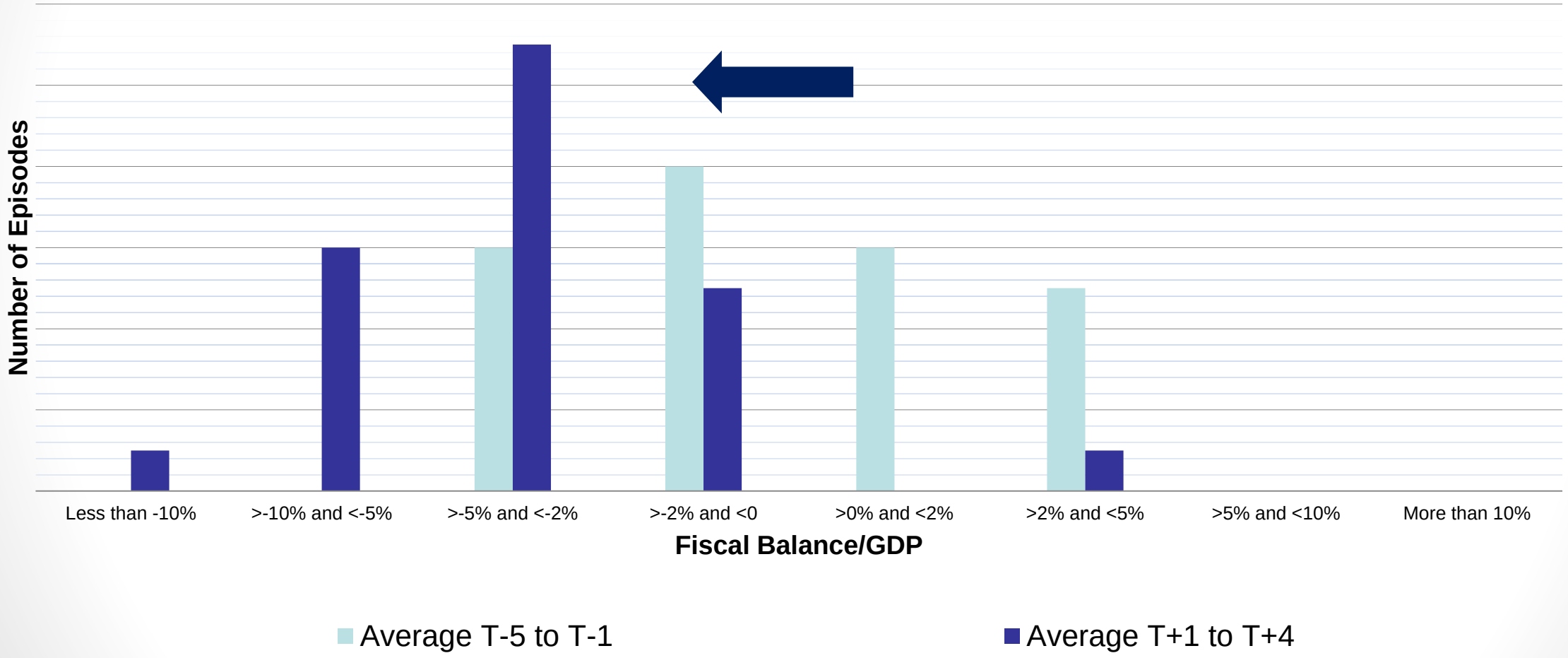
Crises and Big Recessions: heterogeneities

Fiscal Balance



Crises and Big Recessions: heterogeneities

Fiscal Balance



A family of events

- Specificities of various episodes: natural that “no two crises alike”.

- But: common element, substantial output losses.
- Often, economy remains well below past trends

Big Recessions: Recoveries

- Considering big recessions since 1970 (excluding recent episodes)
  57% of countries do not recover previous growth trend (cf. Cerra and Saxena, 2008)

- On average, it takes 6.5 years to reach previous peak levels of GDP.
  A few countries (3%) remain below past maximums, mainly transition economies or economies affected by war.

- Focus on recoveries from recessions in NSLITs episodes.
  Cases around 2009 considered separately.

Big Recessions: Recoveries

- Considering only NSLITs recessions, in 49% of episodes economies reach the pre- crisis trend after great recession.

Reach previous Trend			Do not reach previous Trend		
Rusia (1998)	*Argentina (1988)*	*Argentina (1985)*	*Argentina (1981)*	*Finland (1991)*	*Uruguay (1982)*
Albania (1997)	*Bulgaria (1996)*	*Venezuela (1999)*		*Hong Kong (1998)*	*Uruguay (1999)*
Argentina (1978)	*Mexico (1995)*	*Sweden (1991)*	*Bolivia (1982)*	*Indonesia (1998)*	*Venezuela (1980)*
Venezuela (1989)	*Romania (1997)*	*Macao (1996)*	*Brazil (1981)*	*Malaysia (1998)*	*Colombia (1999)*
Turkey (2001)	*Ecuador (1999)*		*South Korea (1998)*	*Peru (1982)*	*Greece (1981)*
Venezuela (2002)	*Chile (1982)*		*Costa Rica (1981)*	*Thailand (1997)*	
Kuwait (1980)	*Peru (1988)*		*Paraguay (1999)*	*Mexico (1982)*	
	49%			**51%**	

- On average, duration of big recession was 2 years, it took 4.2 years to recover previous peak and accumulated output losses were around 10%.

Big Recessions: Recoveries

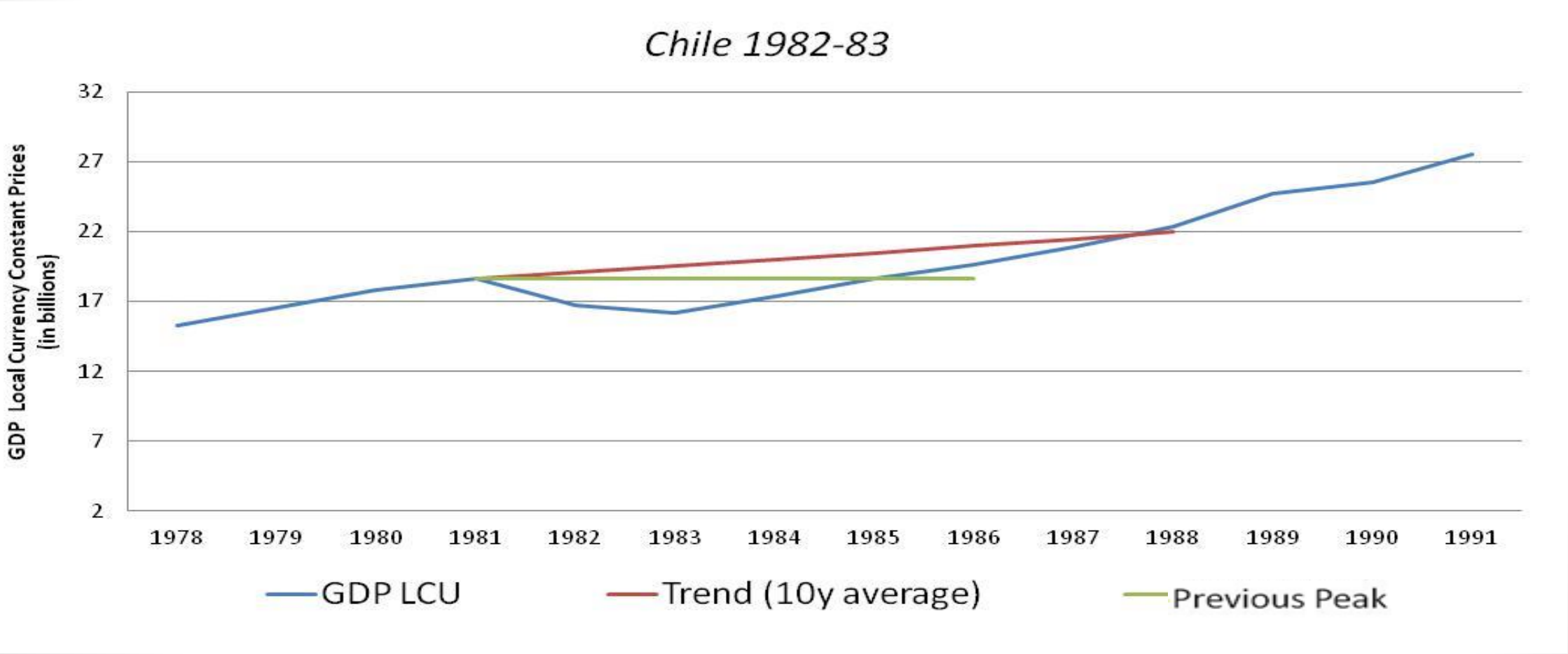
- In countries with strong recoveries, duration of GR in average was shorter (1.9 years) previous GDP peak reached sooner (3.7 years), but output losses similar in magnitude to general average.

	Previous Peak	Trend	Output loss (% of GDP)
Average	3.7 years	6.9 years	11%
Min	1 year	1 year	4.1%
Max	17 years	27 years	43.7%

- Conditional on returning to previous trend levels, recovery takes about 7 years (but with large variance)

Big Recessions: Recoveries

Examples of countries that returned to trend:



Big Recessions: Recoveries

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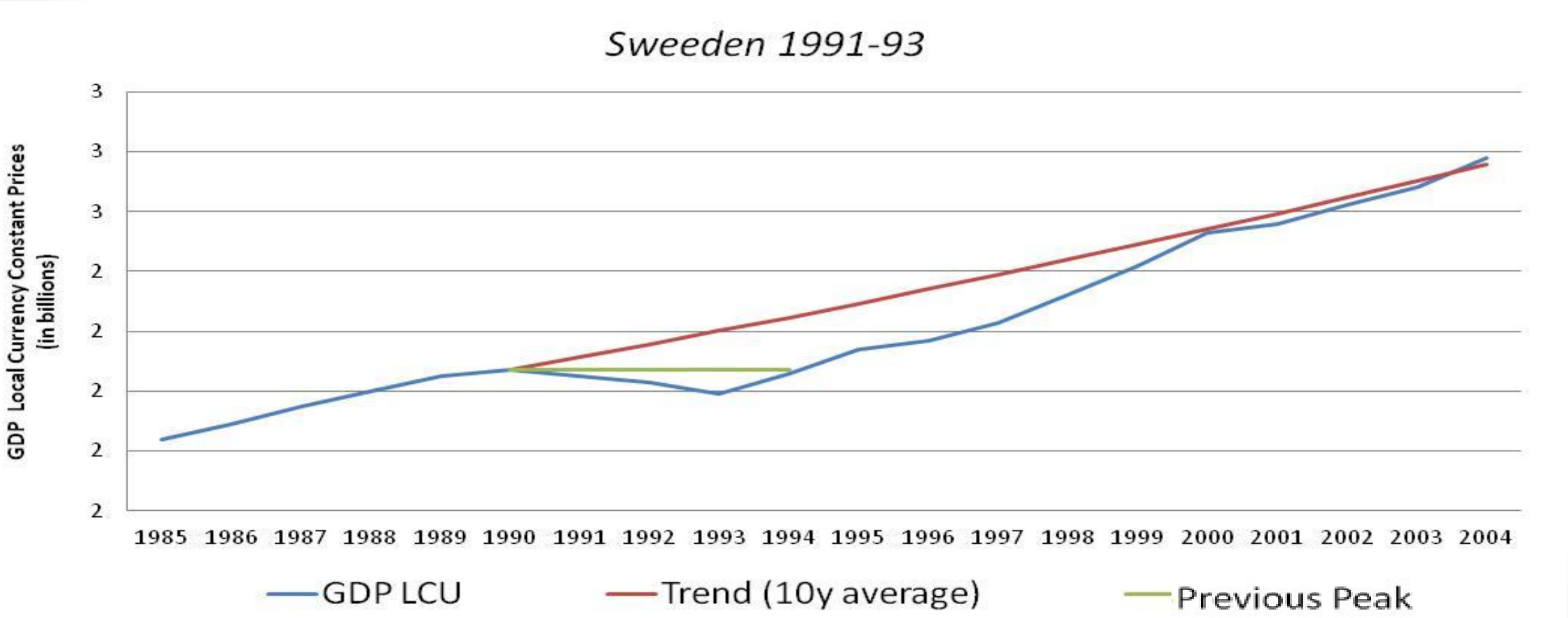

Big Recessions: Recoveries

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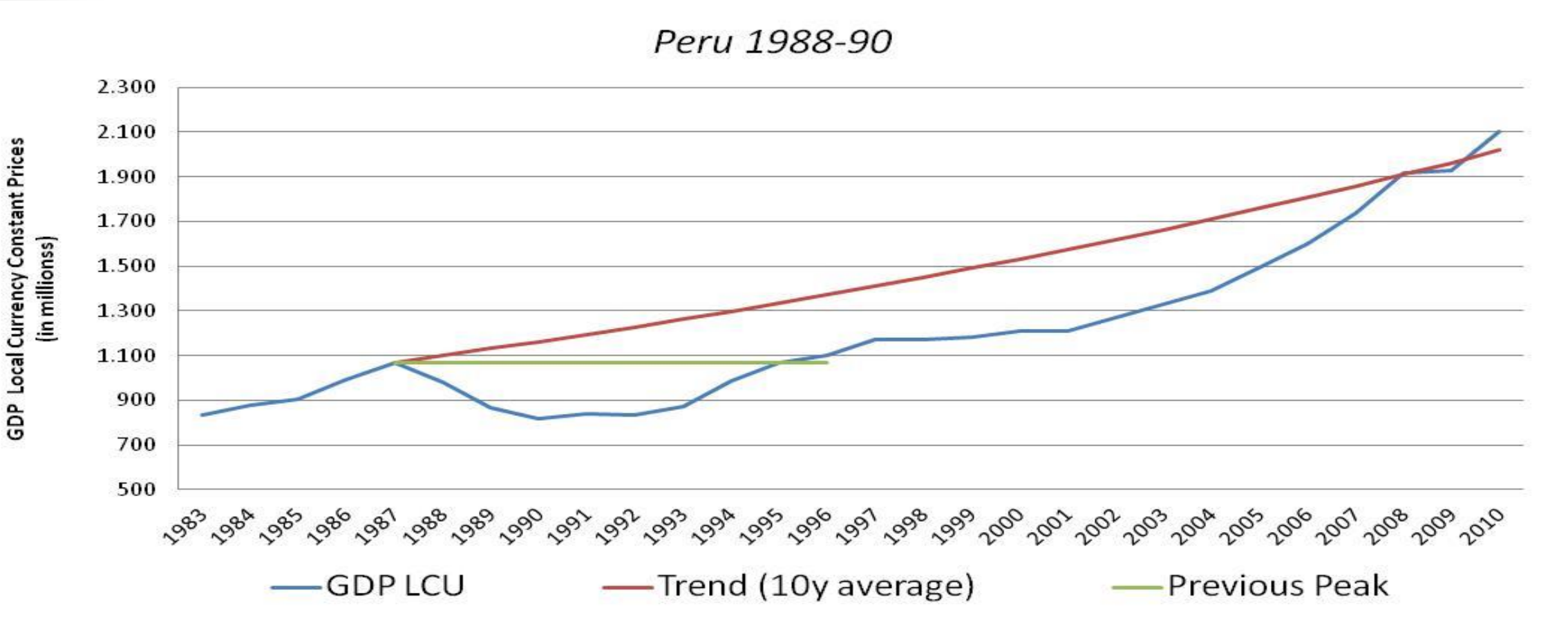
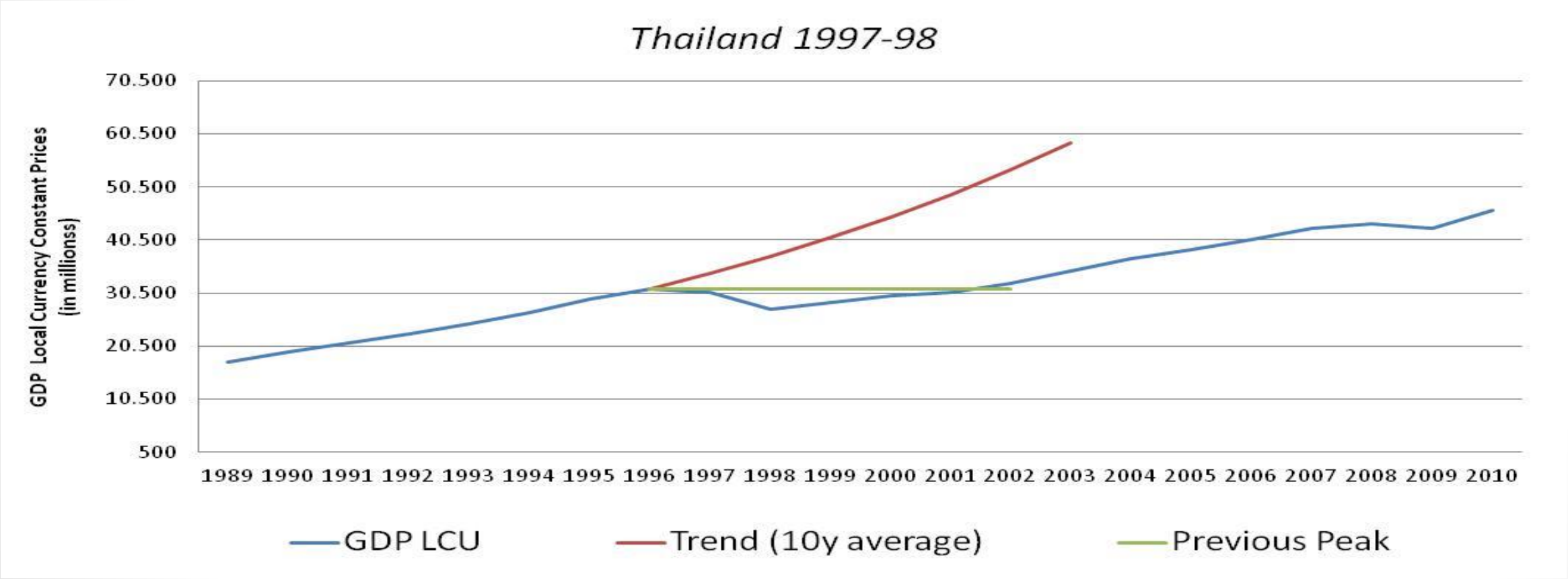


Big Recessions: Recoveries

Examples of countries that did not return to trend:



Big Recessions: Recoveries

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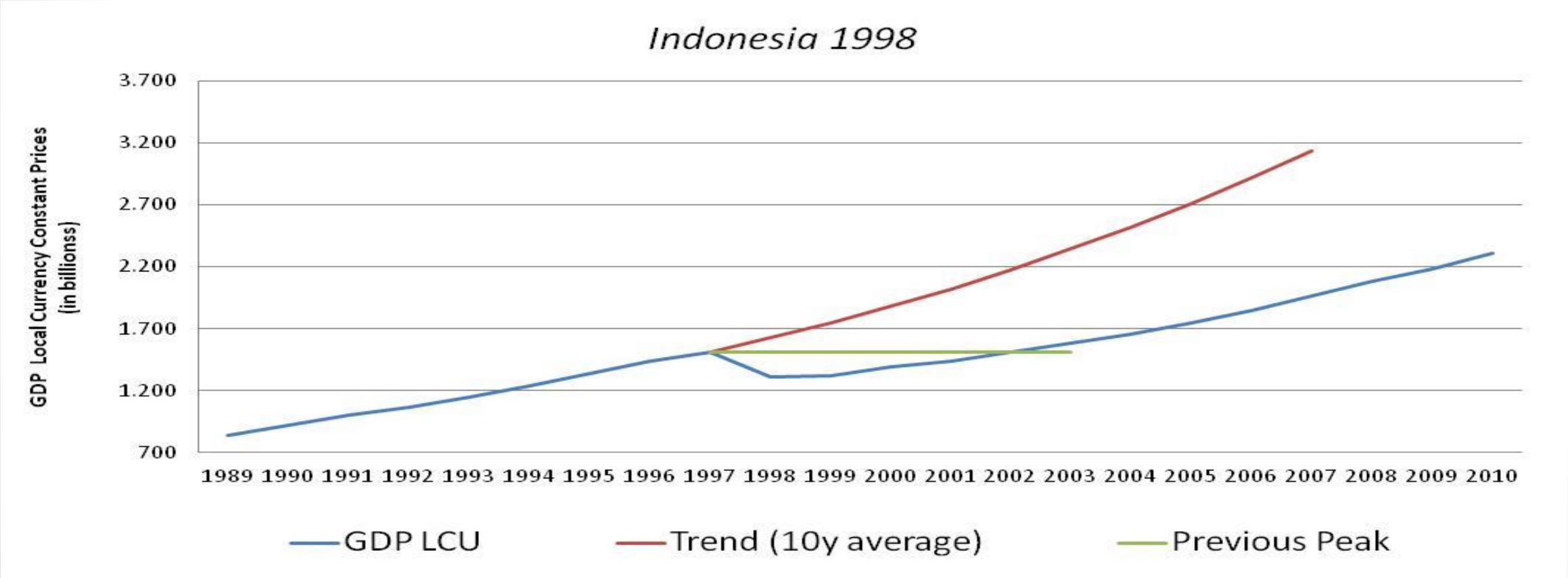

Big Recessions: Recoveries

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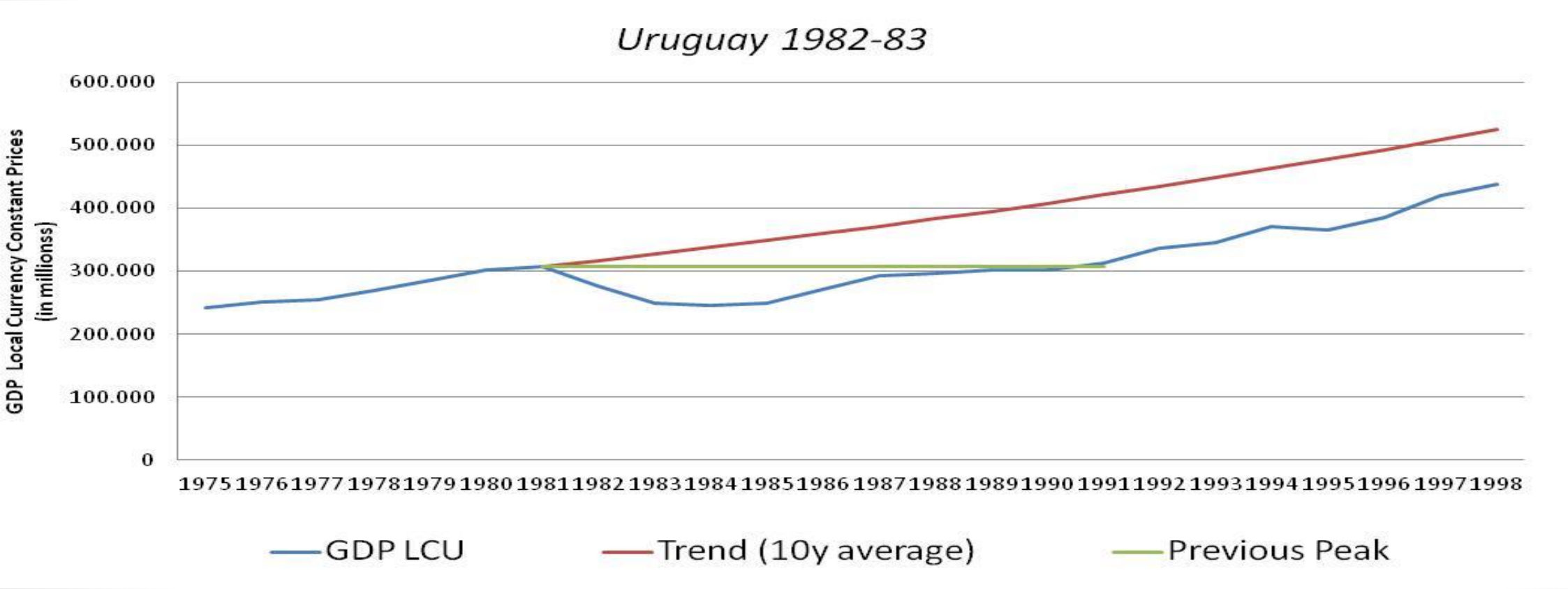

Big Recessions: Recoveries

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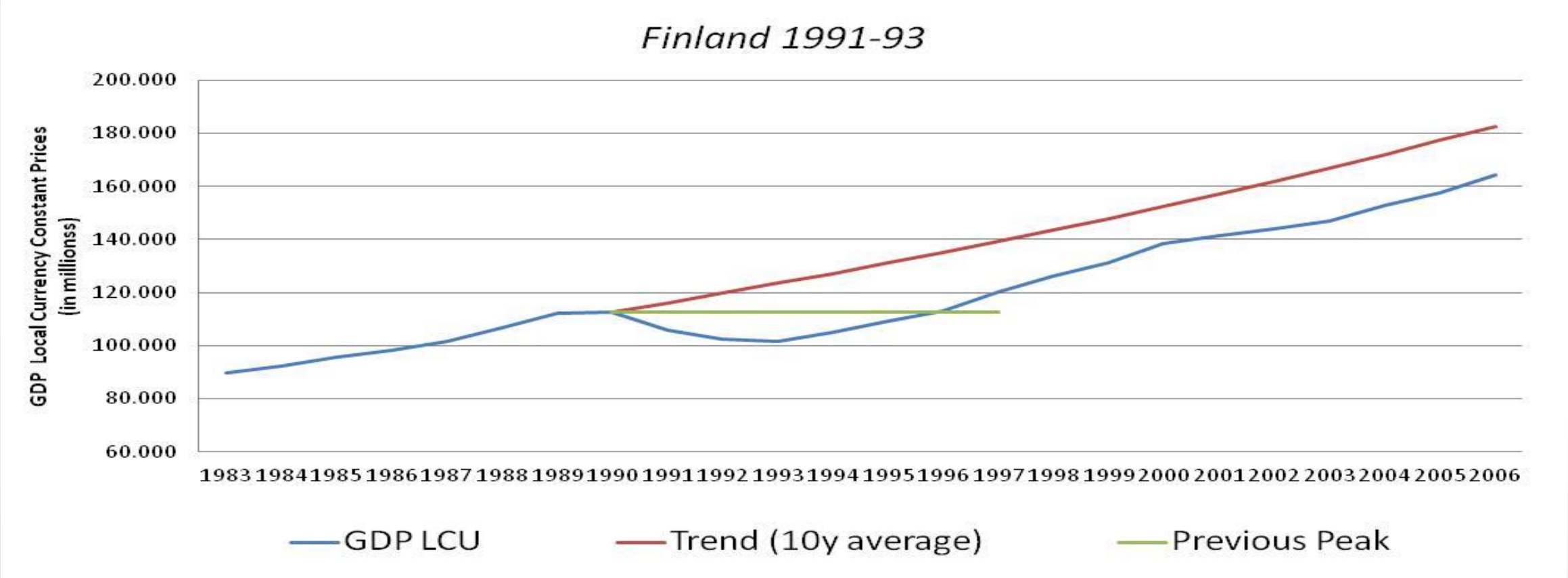
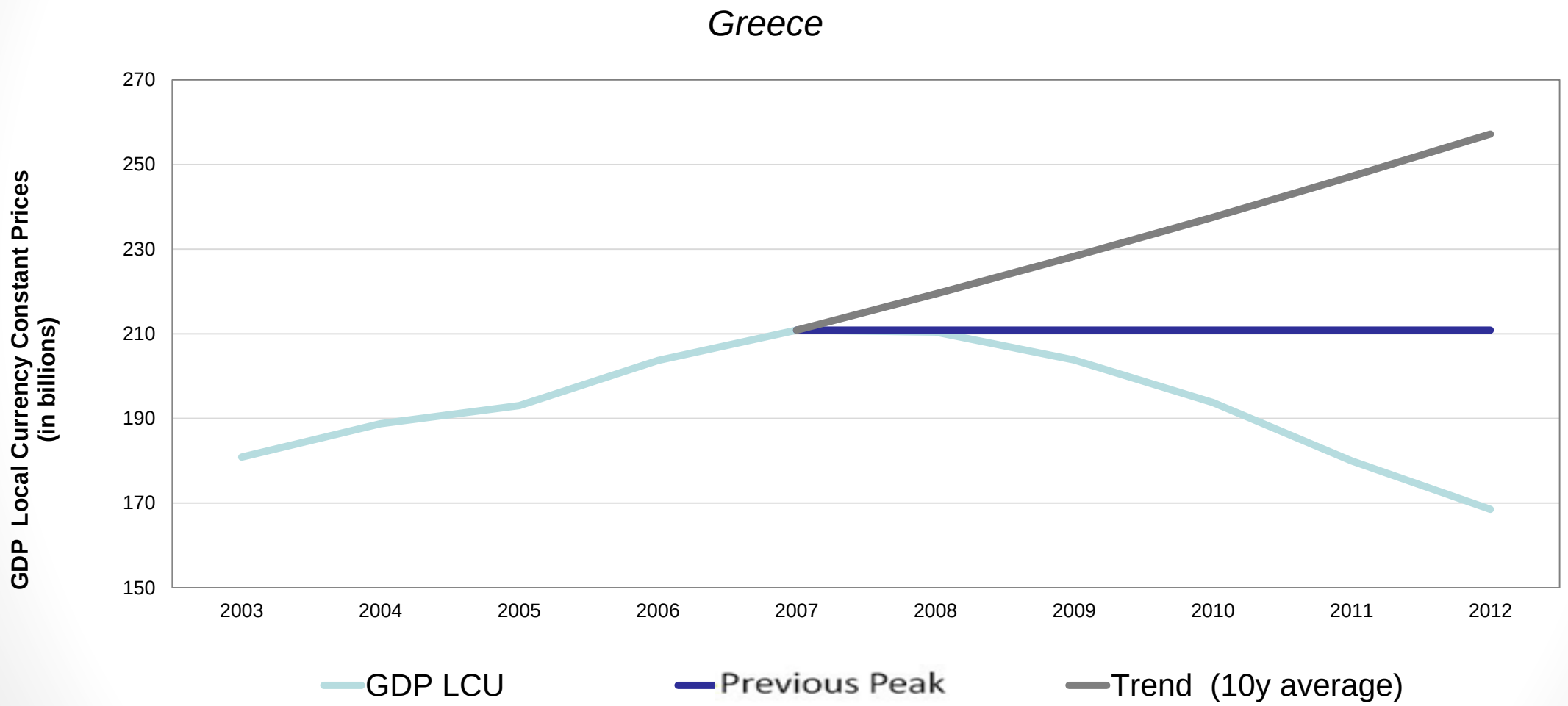


Big Recessions: Recent Episodes



A family of events
General Features

- “Memorable” episodes, marked by widespread difficulties in debt repayment and lower real activity.
- High perceived social costs, large changes in plans and expectations in before and after crisis erupts, occasion for “search for lessons”.
- Shared features: wealth losses, unfulfilled contracts, “broken promises”, falls in productivity without obvious “extra- economic” shock.

A family of events
General Features

- Processes at different time scales, coupled:
  - At some moments: relevance of day-by-day news, especially in financial markets. Perceptions of system near “bifurcation”; actions decided “on the spot” with potentially lasting effects.
  - Movements in aggregate real activity, employment: large fluctuations over months, quarters.
  - Longer-run effects: changes in balance sheets: wealth levels, distribution: attitudes and behaviors regarding spending and asset demands; shifts in policies and institutions. Changes in beliefs: possible reversals in “burden of proof”; return of old debates.

A family of events
General Features

- Macro policies, configuration of financial system, incentive problems, relevant in their ways for development of crisis, but general factor is different:
  - Wealth misperceptions, and financial implications.

- Consequences for policy: planning for the event of next crisis, would differ (in not easily predictable forms) from past ones.

A family of events
General Features

- Interactions between growth trends and large macro fluctuations. Problems of intertemporal coordination induced by difficulties in predicting real incomes over relatively long horizons.

- Implicit: RE of growth performance hard to determine, especially if “innovation” (technology, institutions) believed to be driving force.

A family of events
General Features

- Topics:
  - Variable trends, expectational disturbances and debt cycles. Other effects as complementary mechanisms.
  - Sustainability. Issues in determining precise notion; evaluations as forward-looking exercises in evolving systems (relevant “fundamentals” are prospective).

A family of events
General Features

- Topics:
  - Types of crisis according to nature, strength of disturbances. Potential policy implications in dealing with crises: “lender, spender, debtor of last resort”.
  - Crucial to represent intertemporal choices and expectations, and propagation effects between agents/markets. Much room for exploration.

A family of events
General Features

- Crises imply re-evaluation of trends, growth potential of incomes, repayment capacities.
- Overexpansions of credit and spending not necessarily motivated by “eccentric” beliefs: expectations may correspond to currently prevailing theories/ opinions.
- May be preceded by large fiscal or external deficits, but not necessarily. “Fundamentals” relevant for sustainability of debts prospective by nature.

A family of events
General Features

- Solvency problems may appear in public or private sectors, with potential transmission among them.
- Big recessions and financial crashes, prompting governments to absorb bad debts may be sources of fiscal troubles in various instances (even if previous fiscal positions seemingly solid).
- Fragile public finances impact private sector in several ways: unforeseen adjustments in taxes, government spending, falls in asset prices and financial disturbances, inflation.

A family of events
General Features

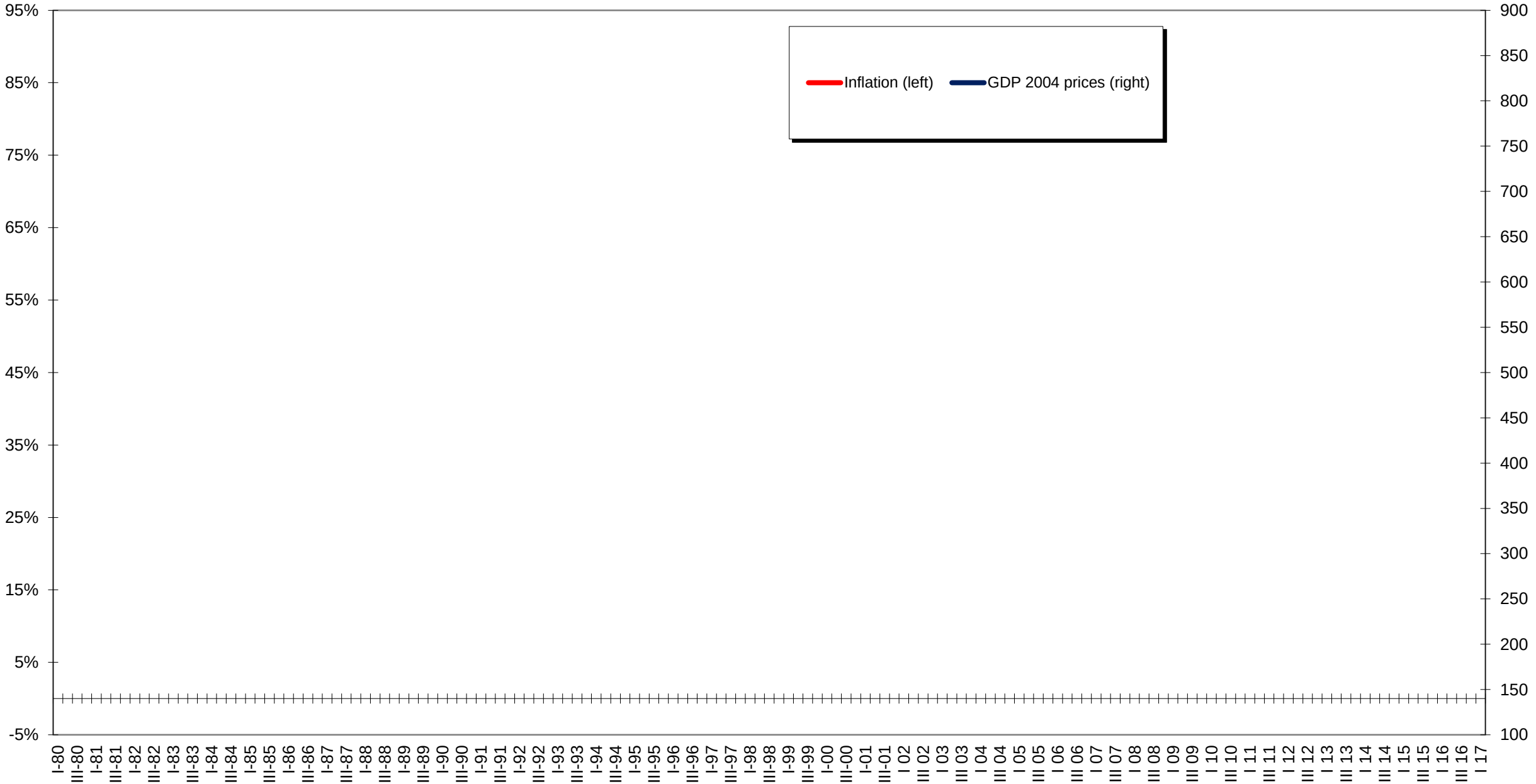
- Presence of abrupt transitions in perceptions and behaviors.
- Expectations of repayment prospects: as if at some point switches in burden of proof regarding solvency. Issues of coordination, but not only.
- When expectations “on the other side”, difficult to bring back. Urgent concern about exit by asset holders may become central focus for policies.

A family of events
General Features

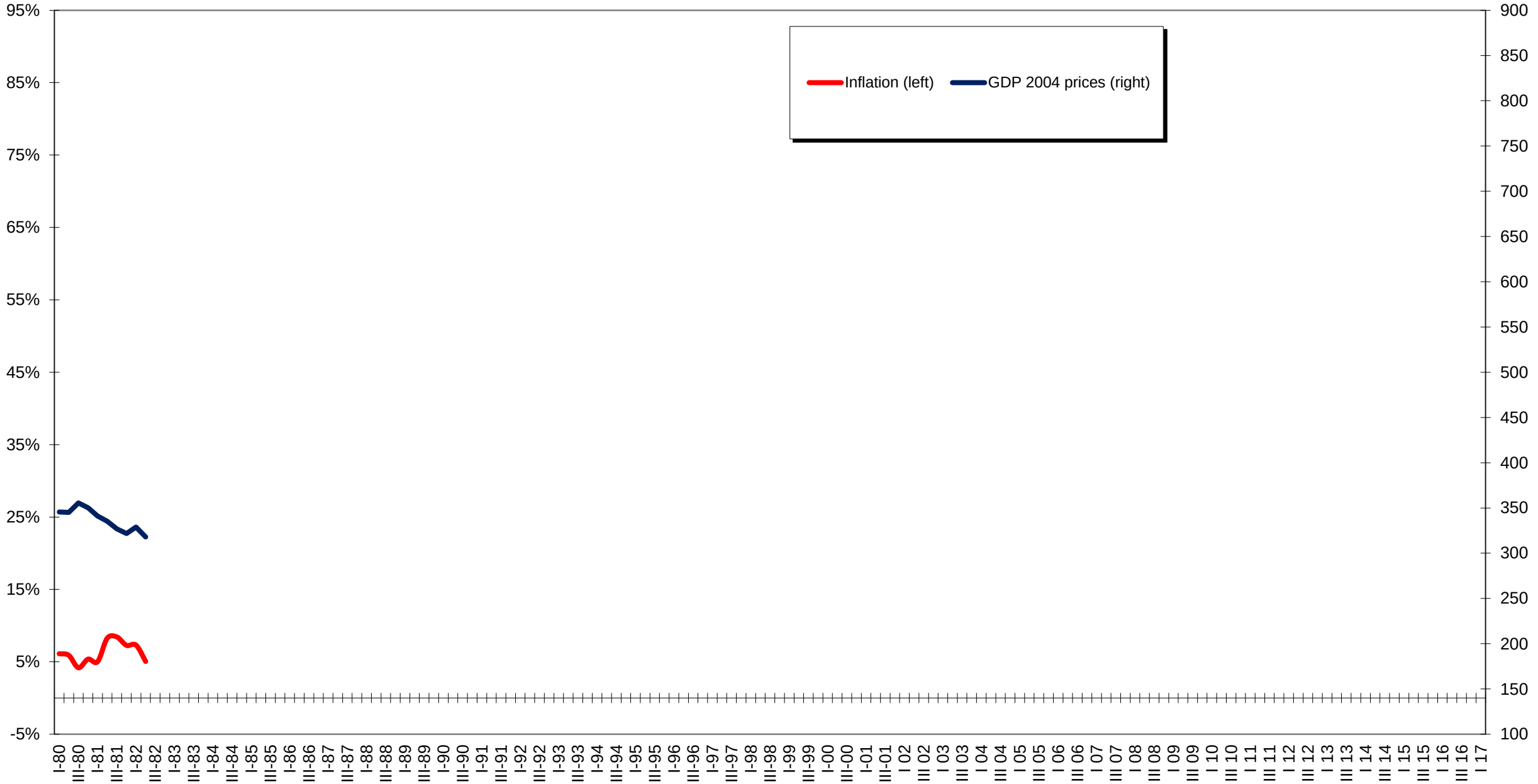
- Not arguing that “in the aggregate”, agents make obvious mistakes: growth trends in real activity and incomes are really difficult to forecast.

- In some economies, the problem has been historically very complicated, with macro evolution marked by changes in growth rates and crises of different kinds.

GDP at constant prices and CPI inflation rates



GDP at constant prices and CPI inflation rates



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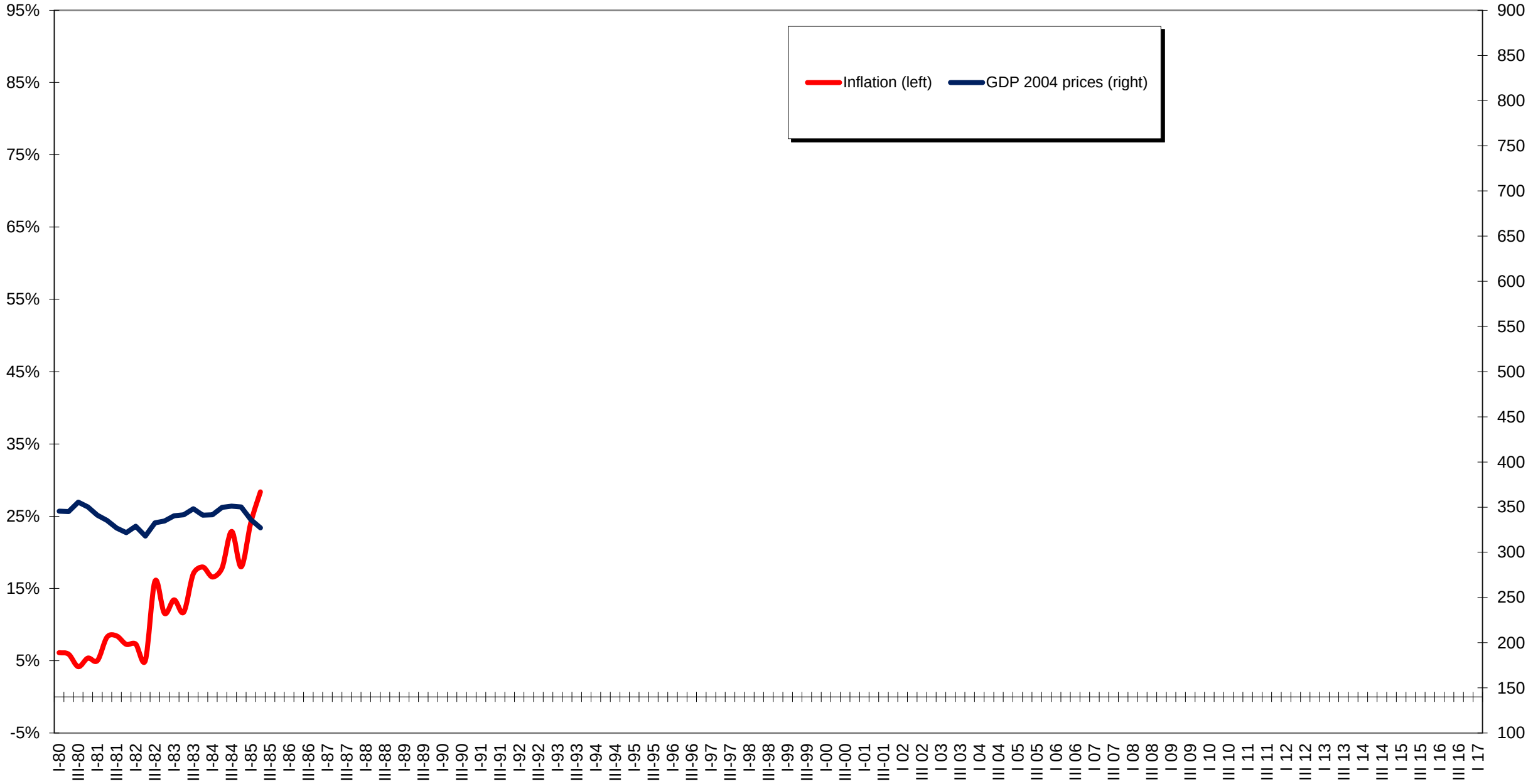

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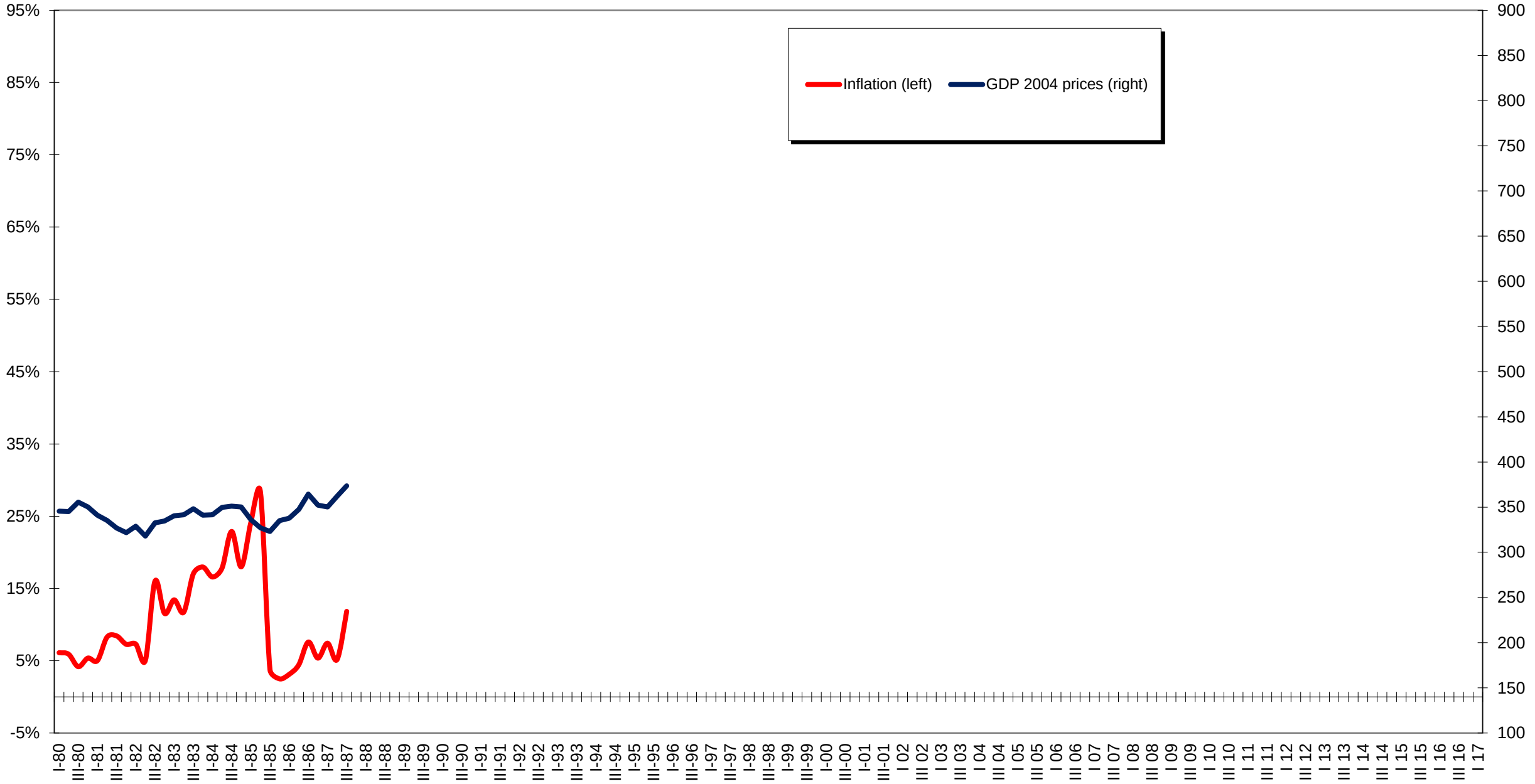

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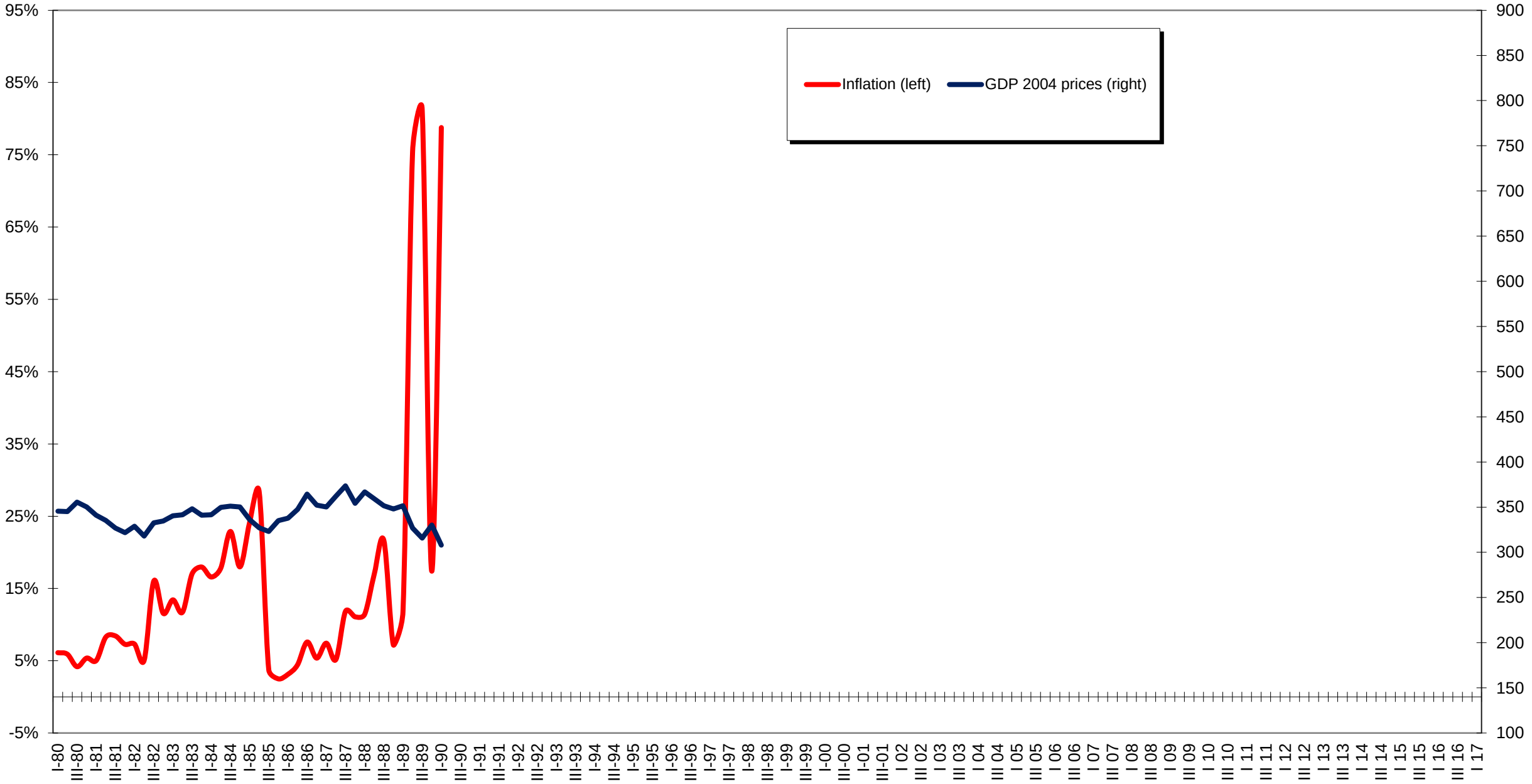

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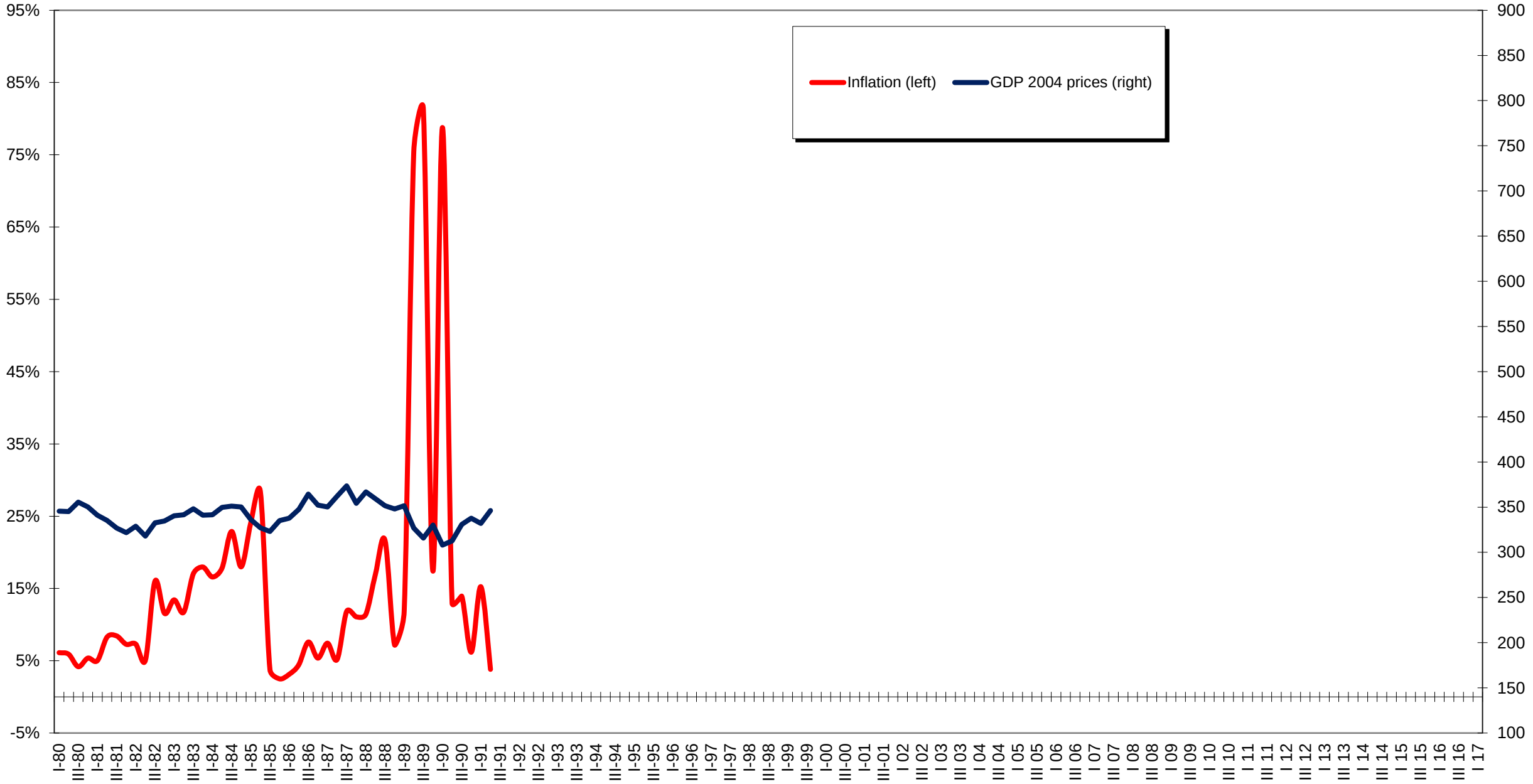

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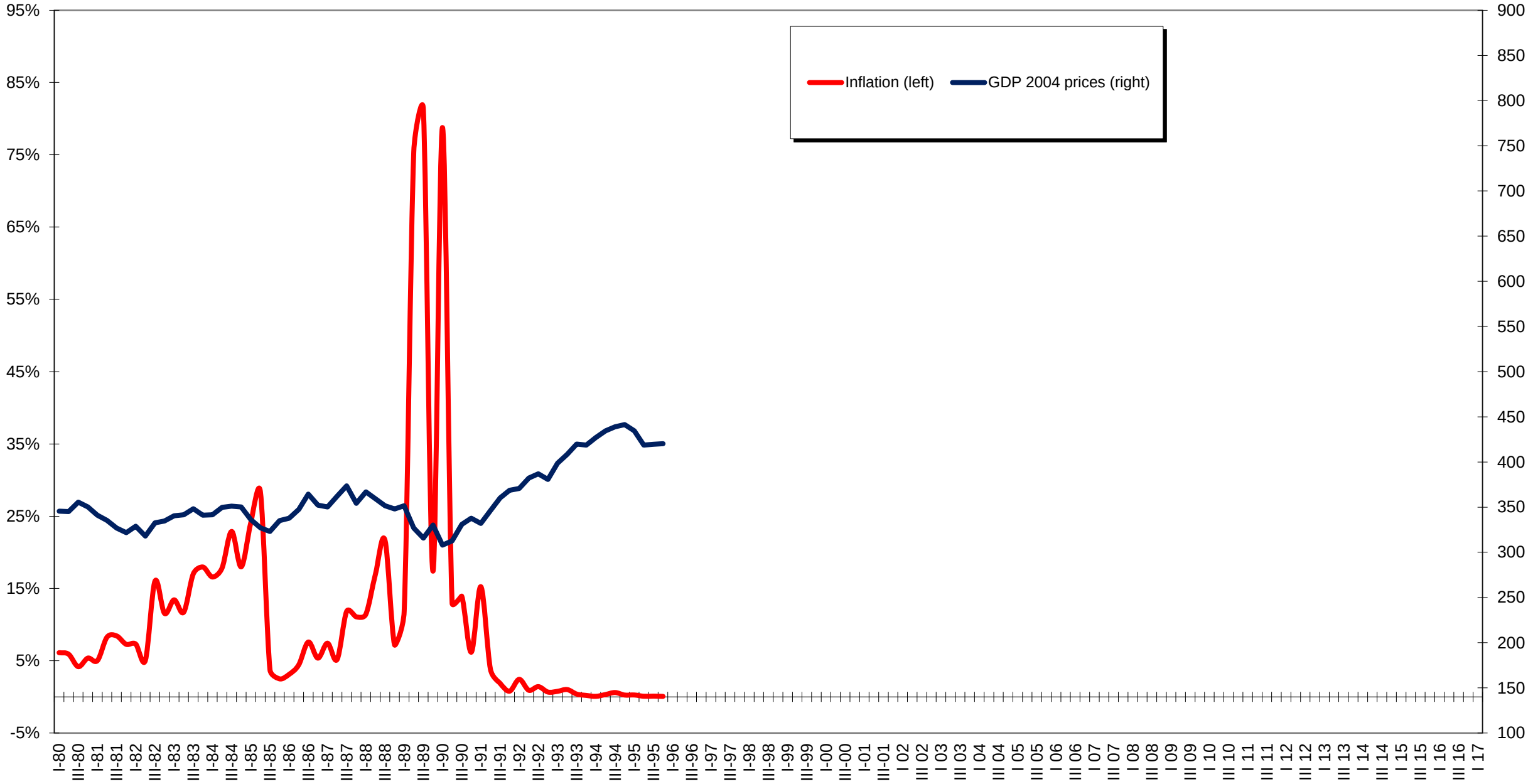

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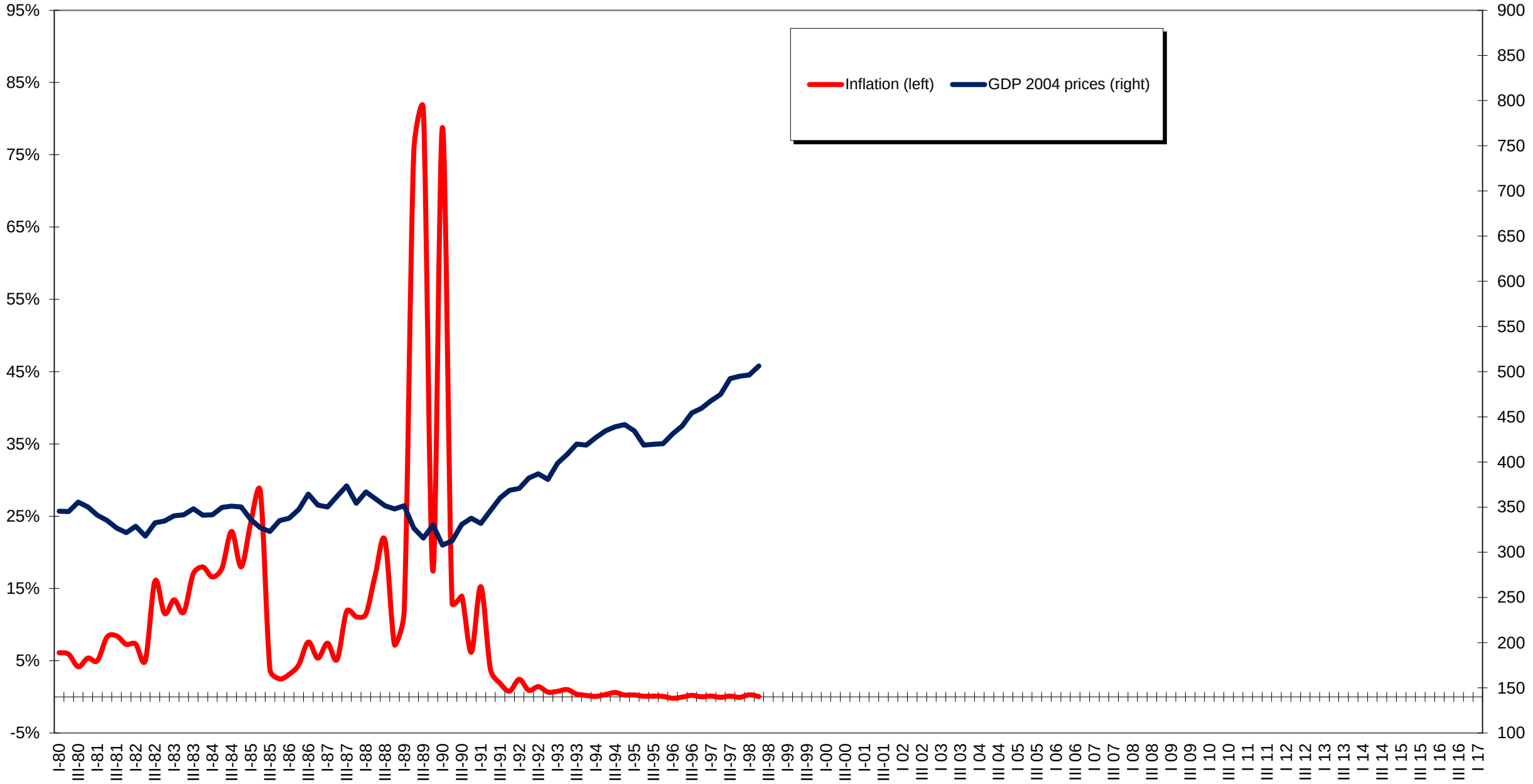

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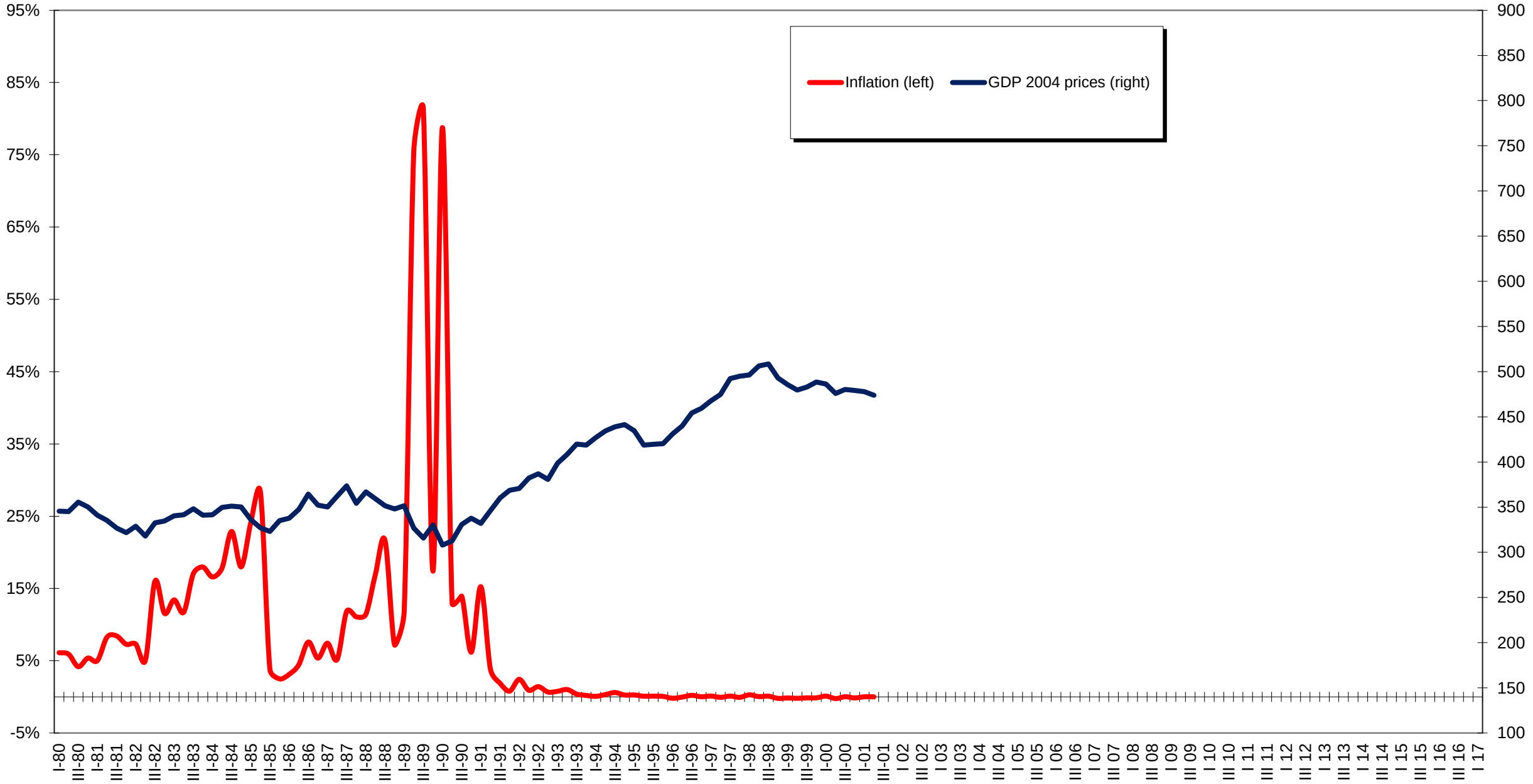
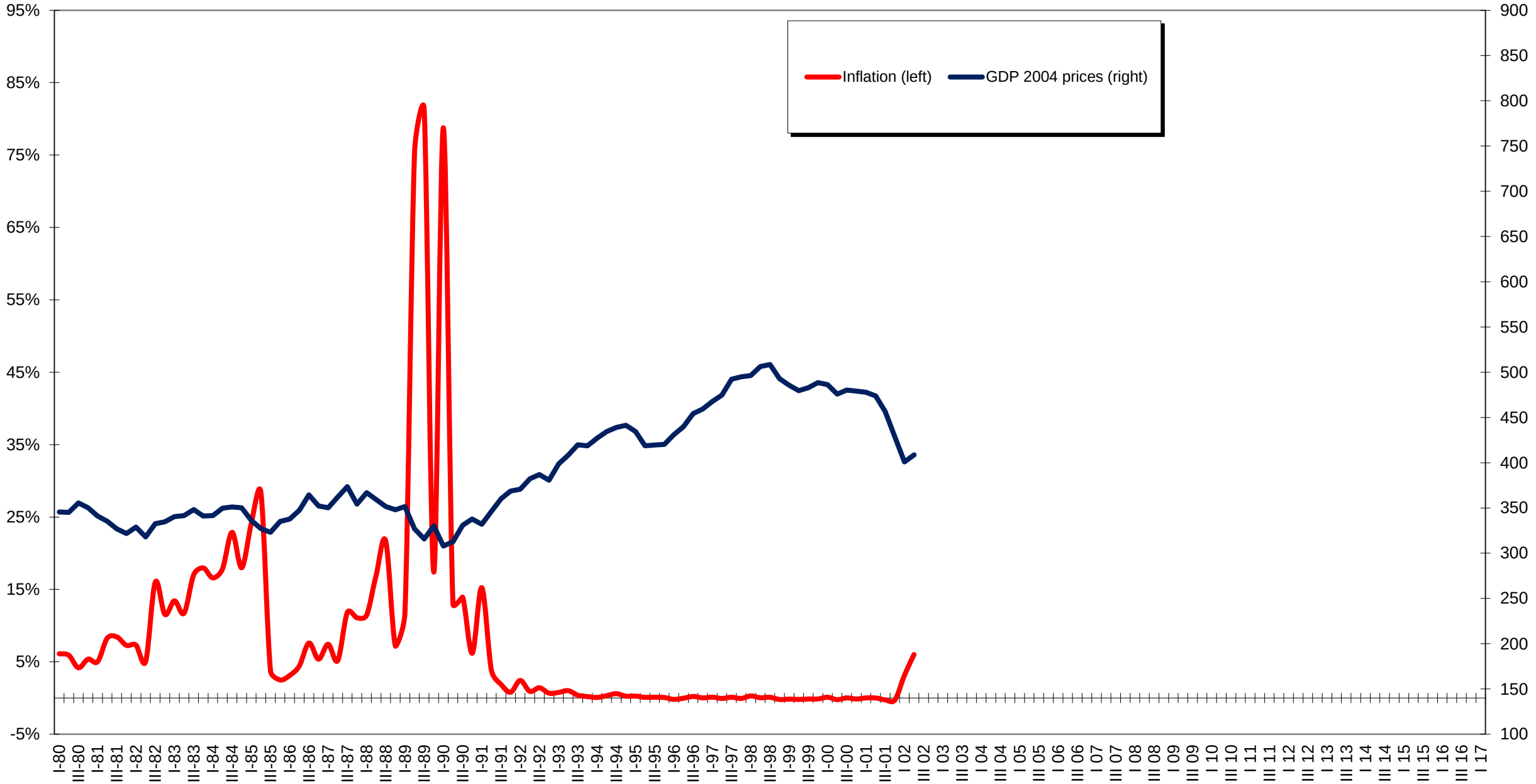
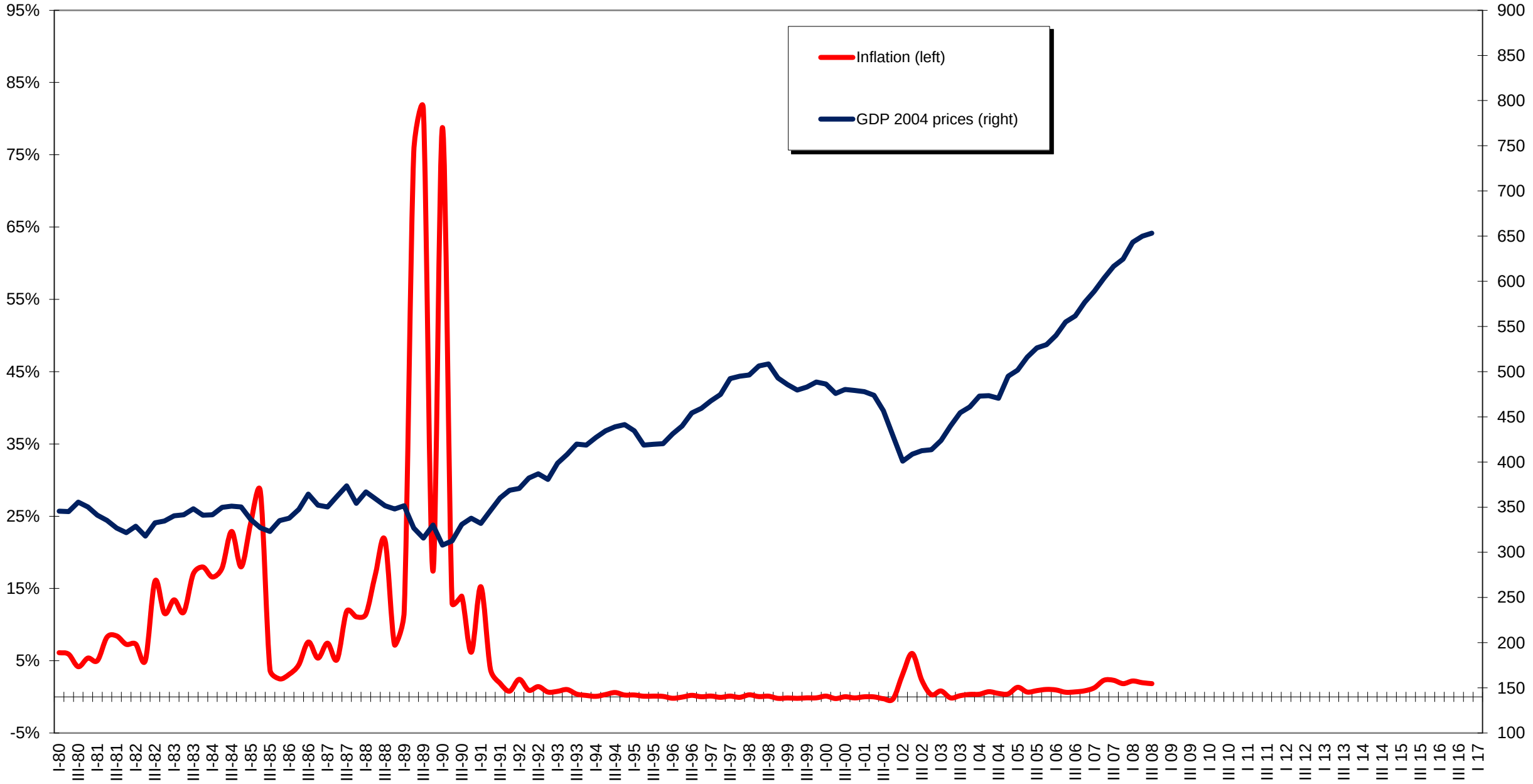


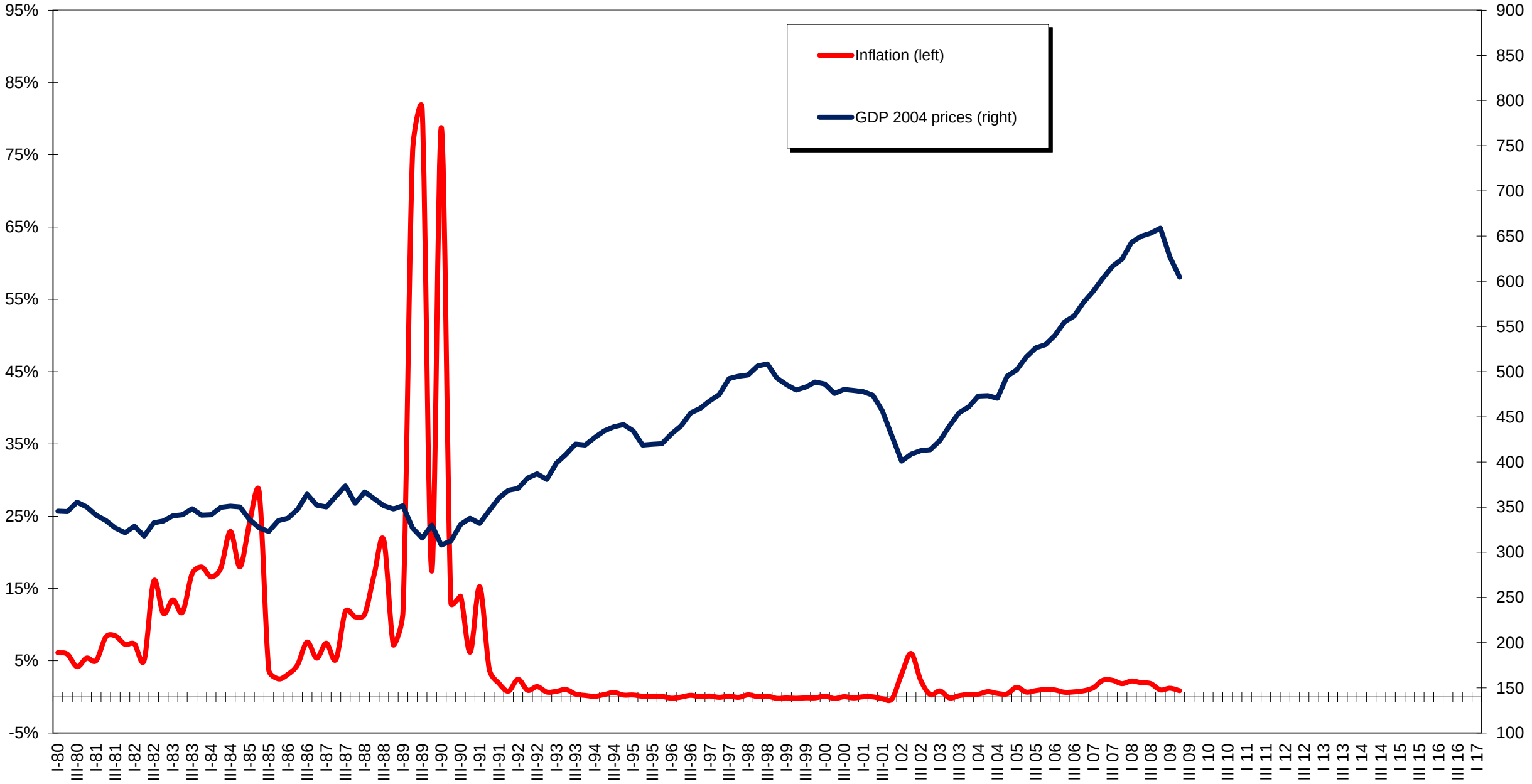
GDP at constant prices and CPI inflation rates



GDP at constant prices and CPI inflation rates



GDP at constant prices and CPI inflation rates



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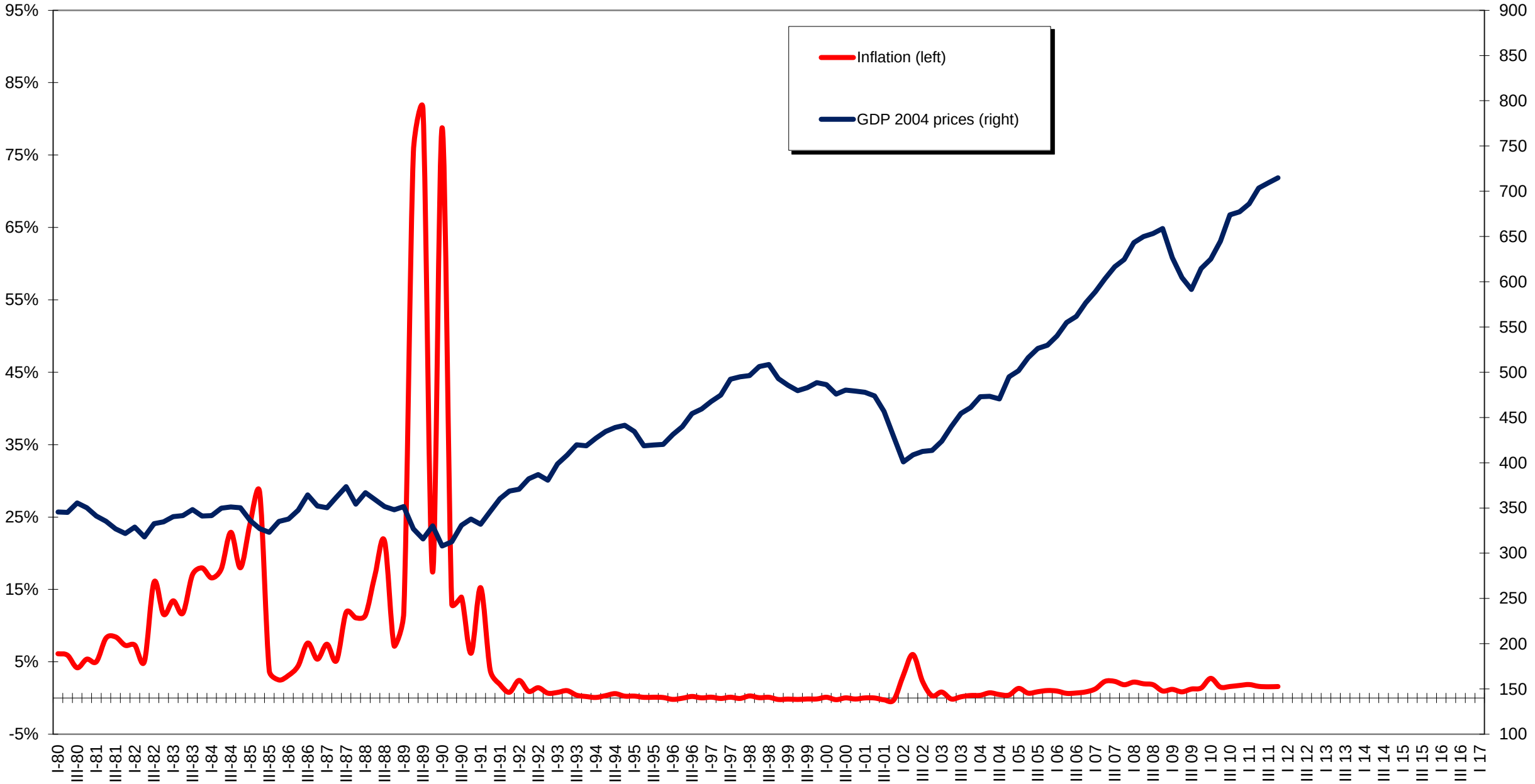

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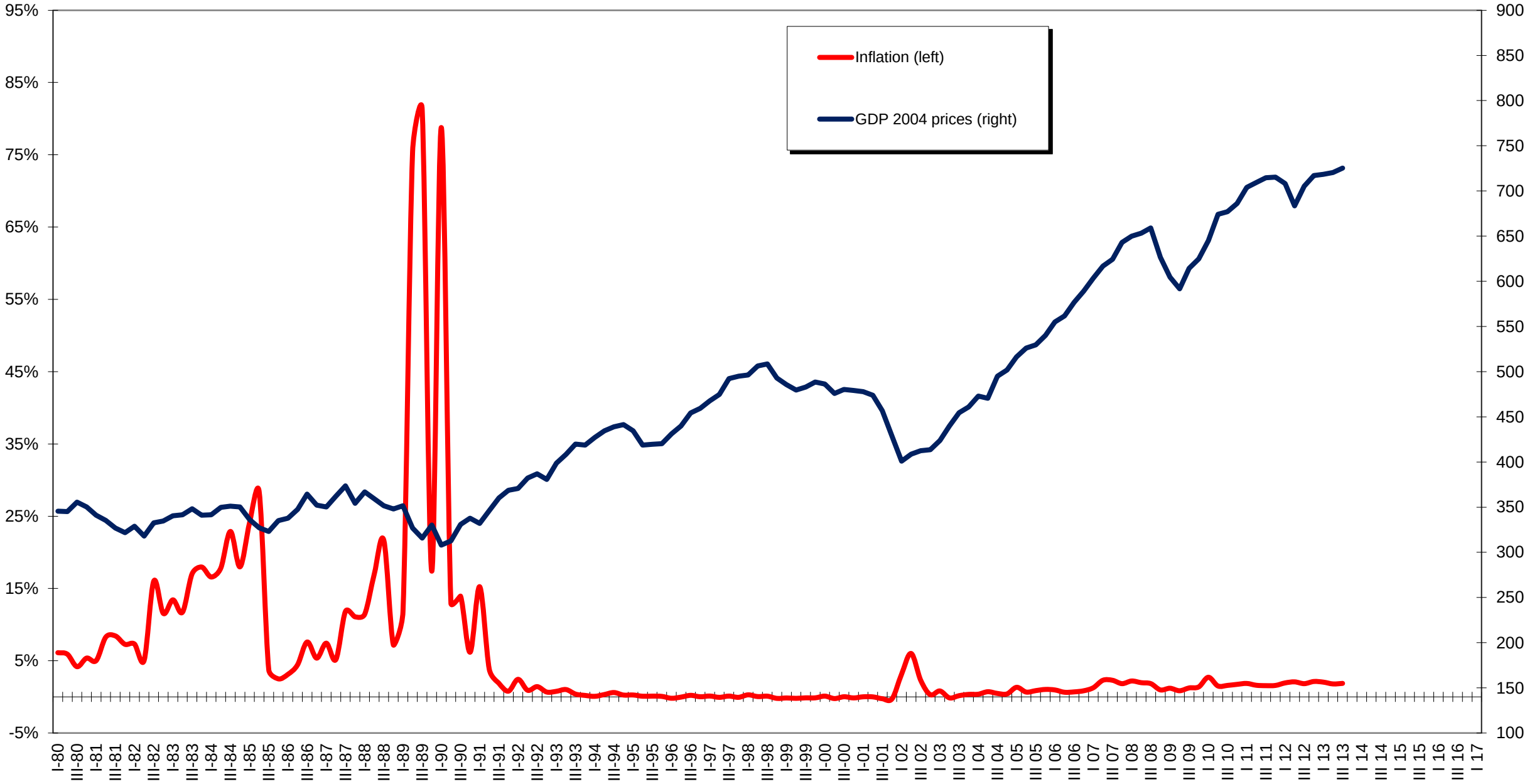

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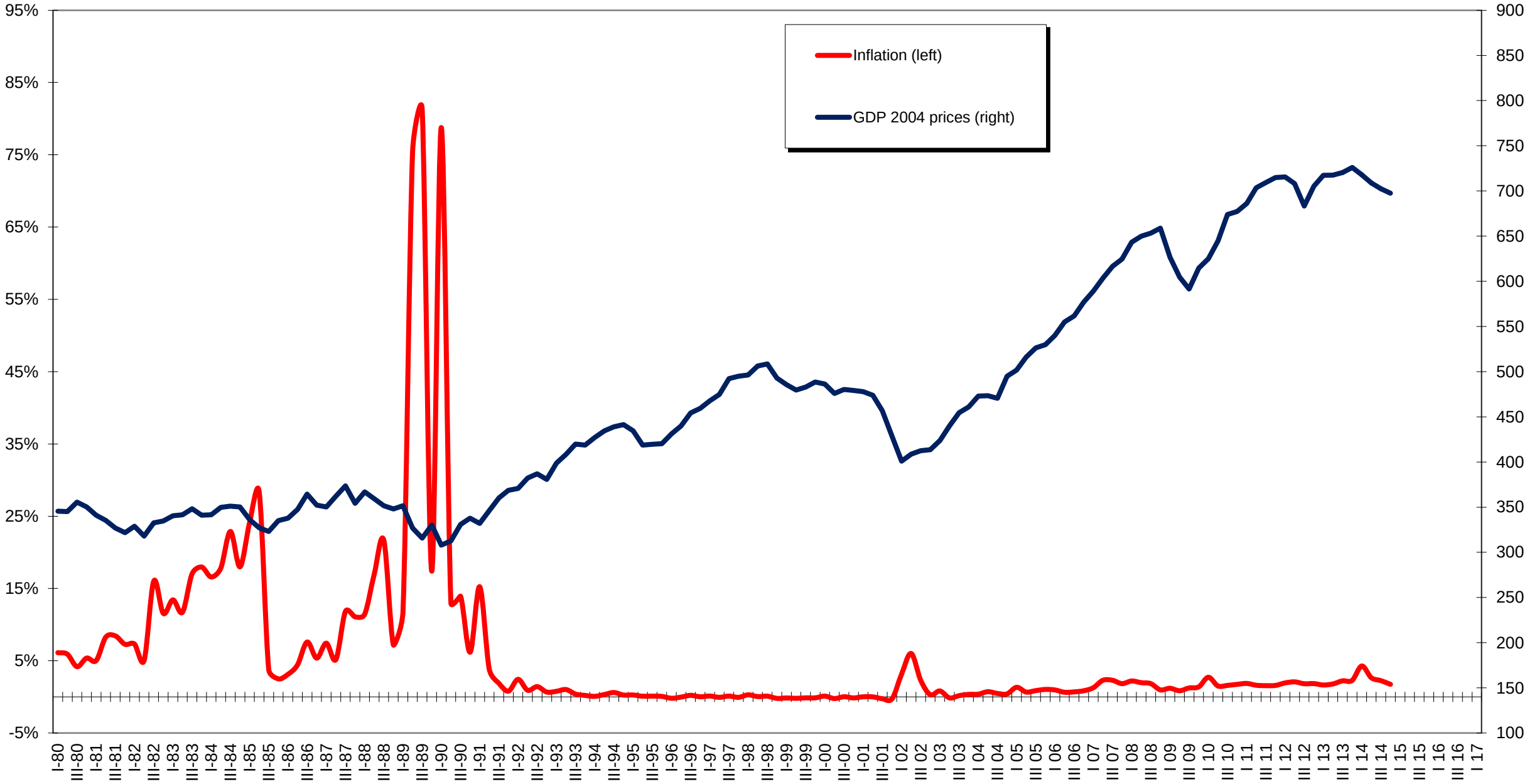

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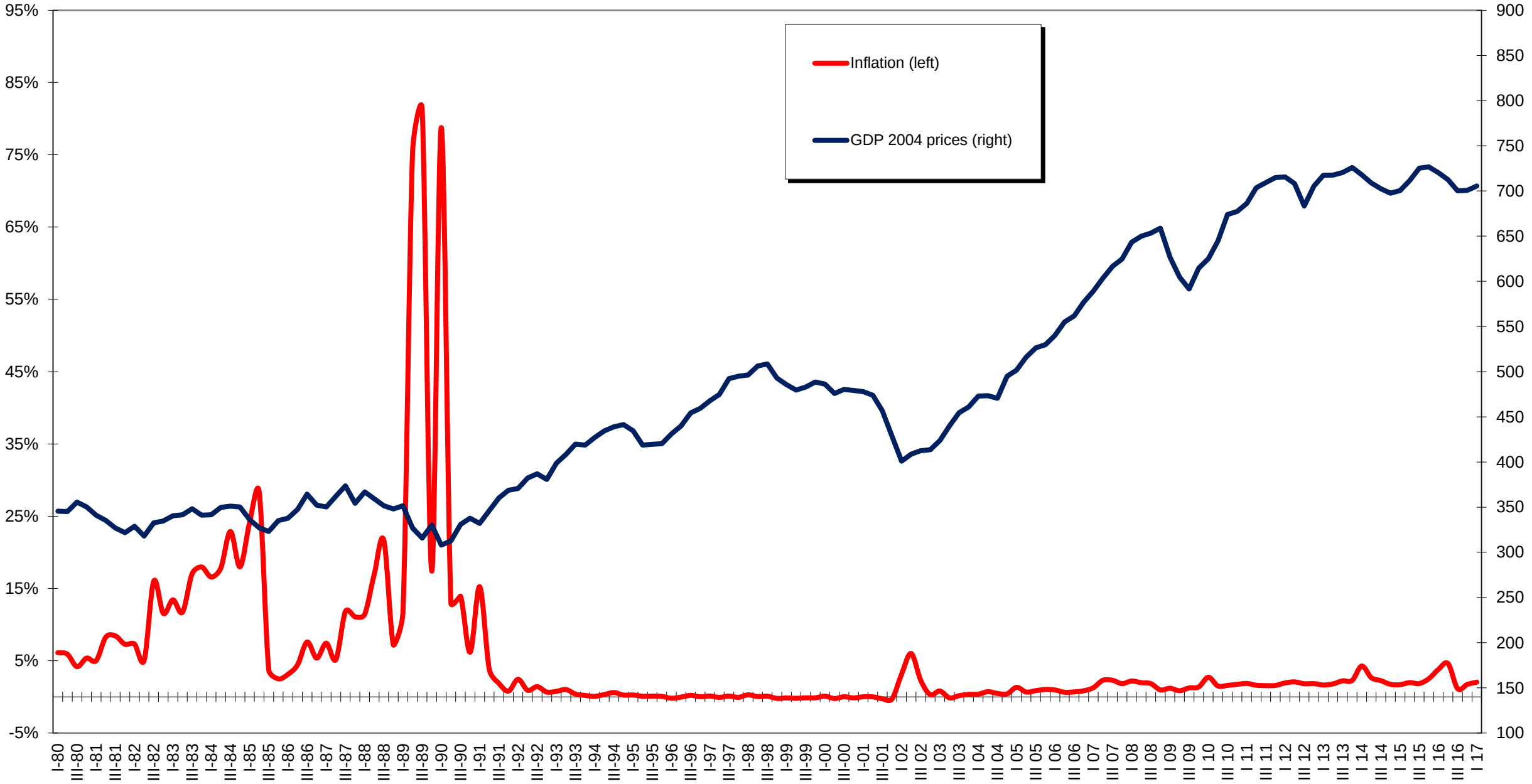
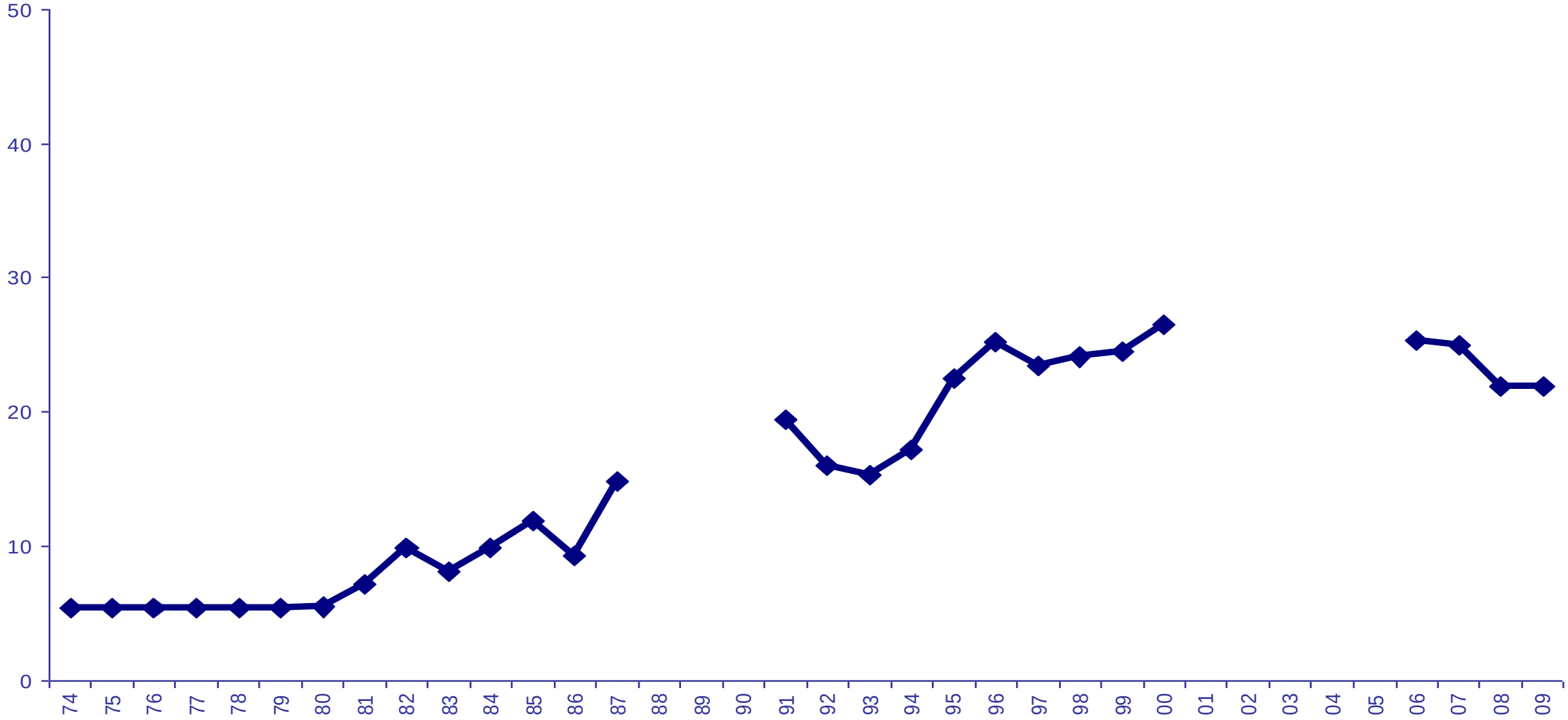


Incidence of Poverty, Argentina



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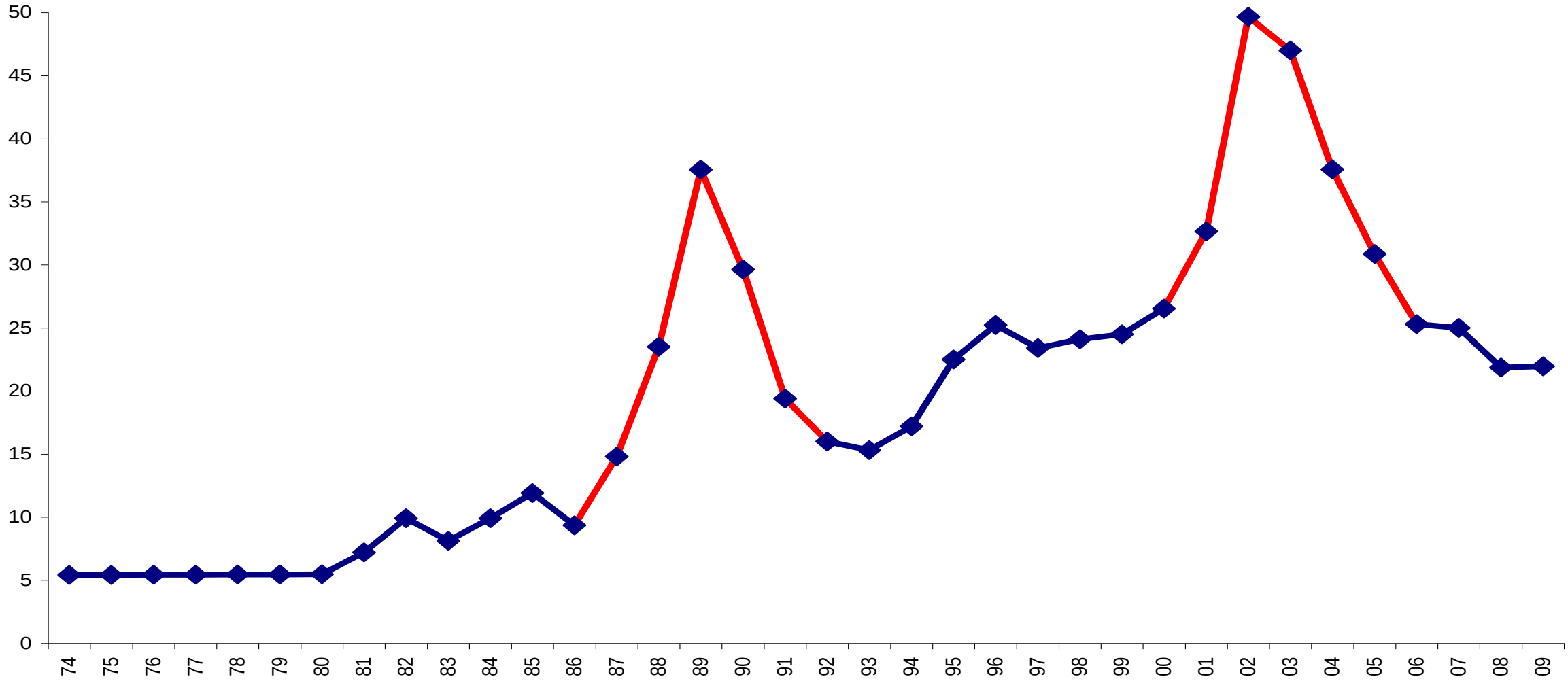

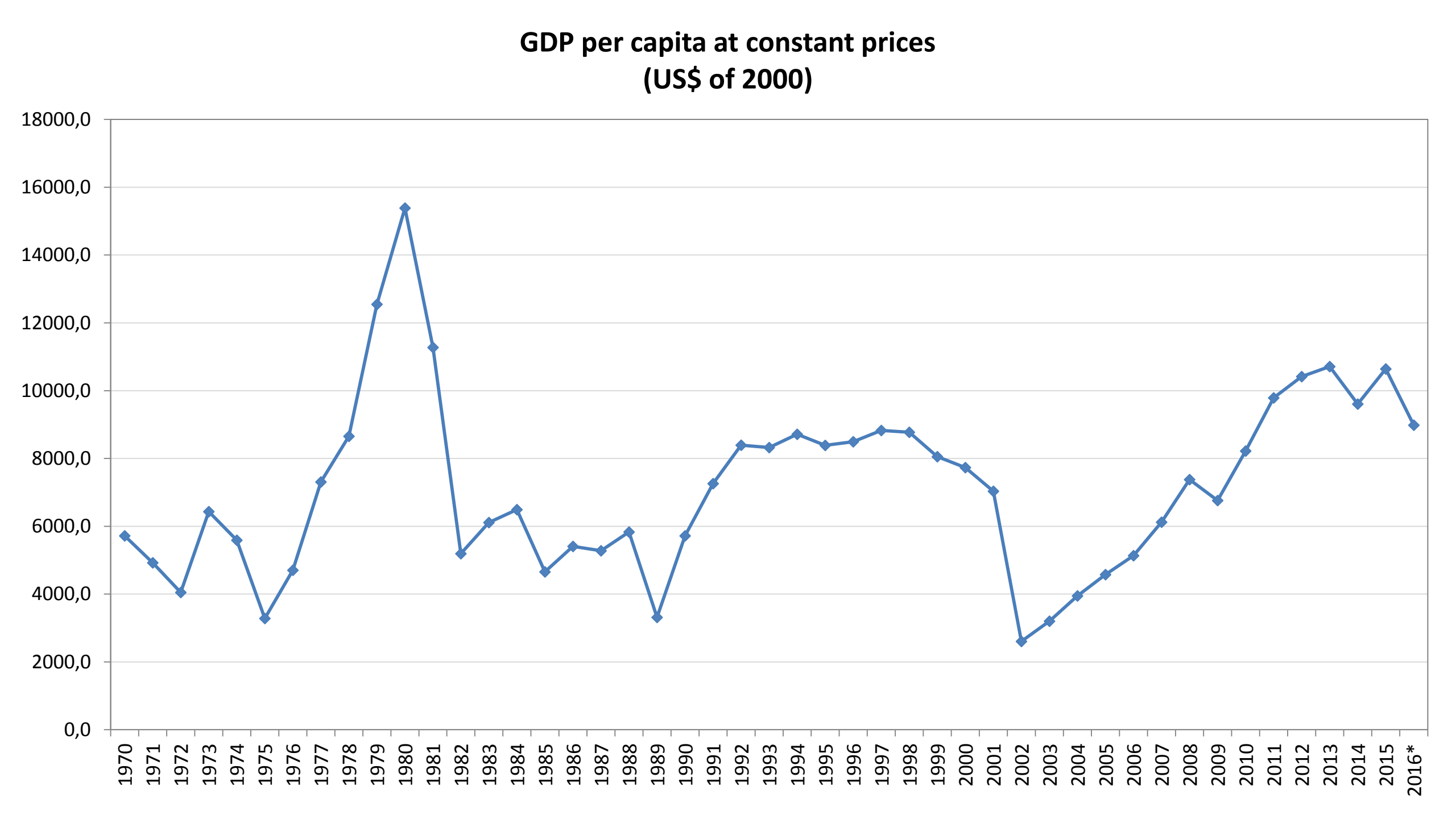
GDP per capita at constant prices
(US$ of 2000)
18000,0
16000,0
14000,0
12000,0
10000,0
8000,0
6000,0
4000,0
2000,0
0,0
1970
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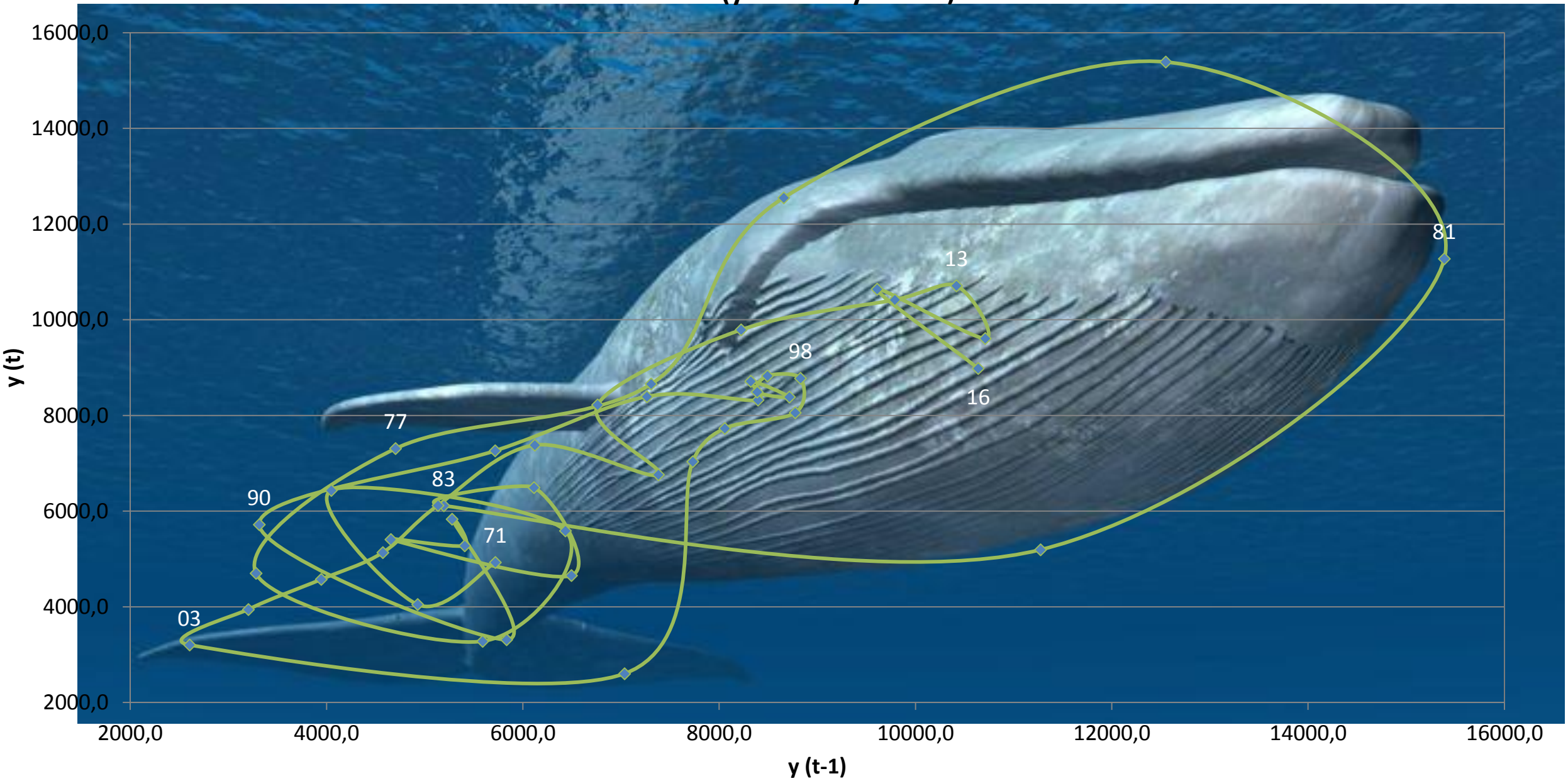
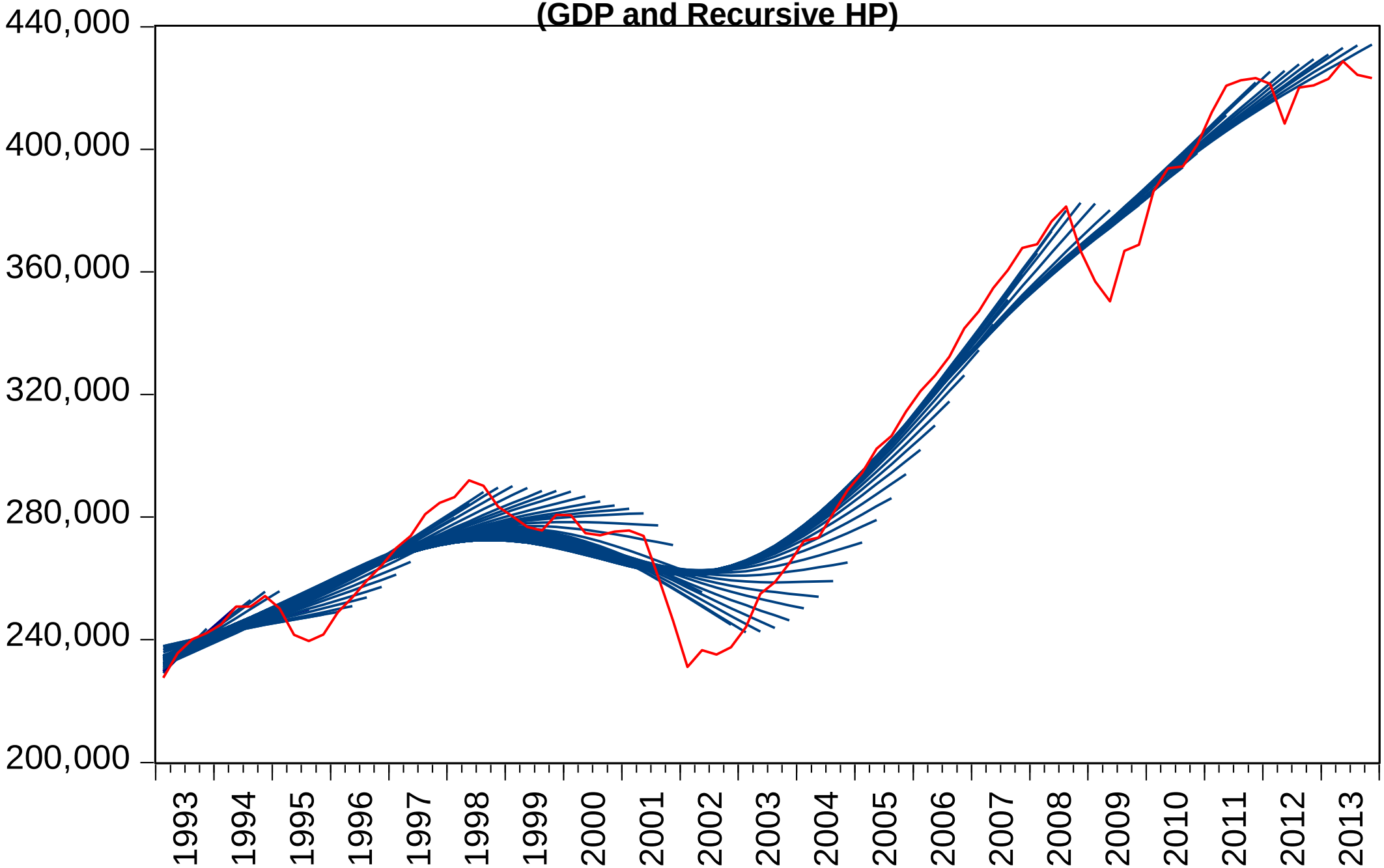
Phase Diagram, GDP per capita at constant prices, USD of 2000
1970-2016 (year t vs. year t-1)



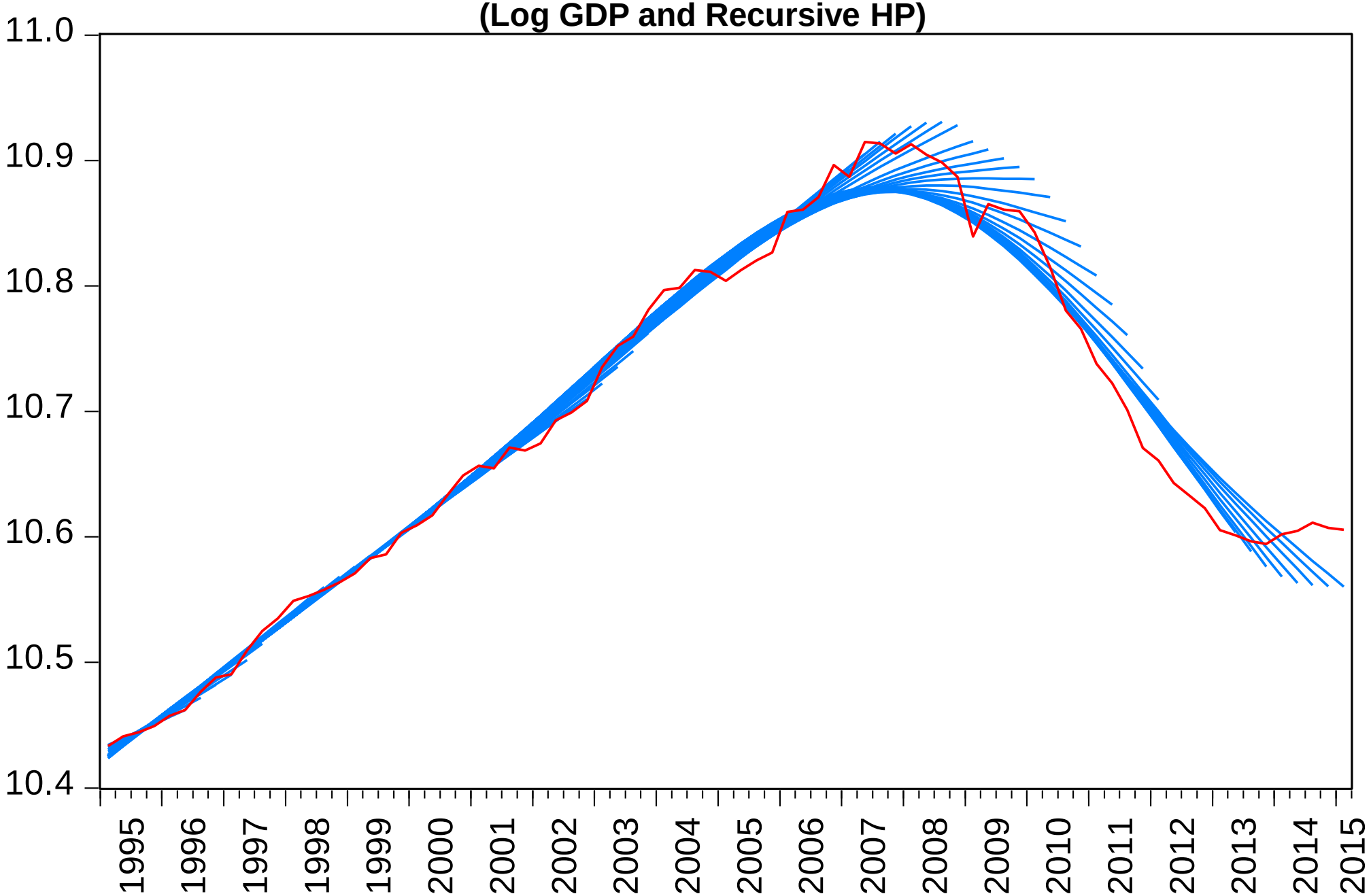
Argentina

(GDP and Recursive HP)

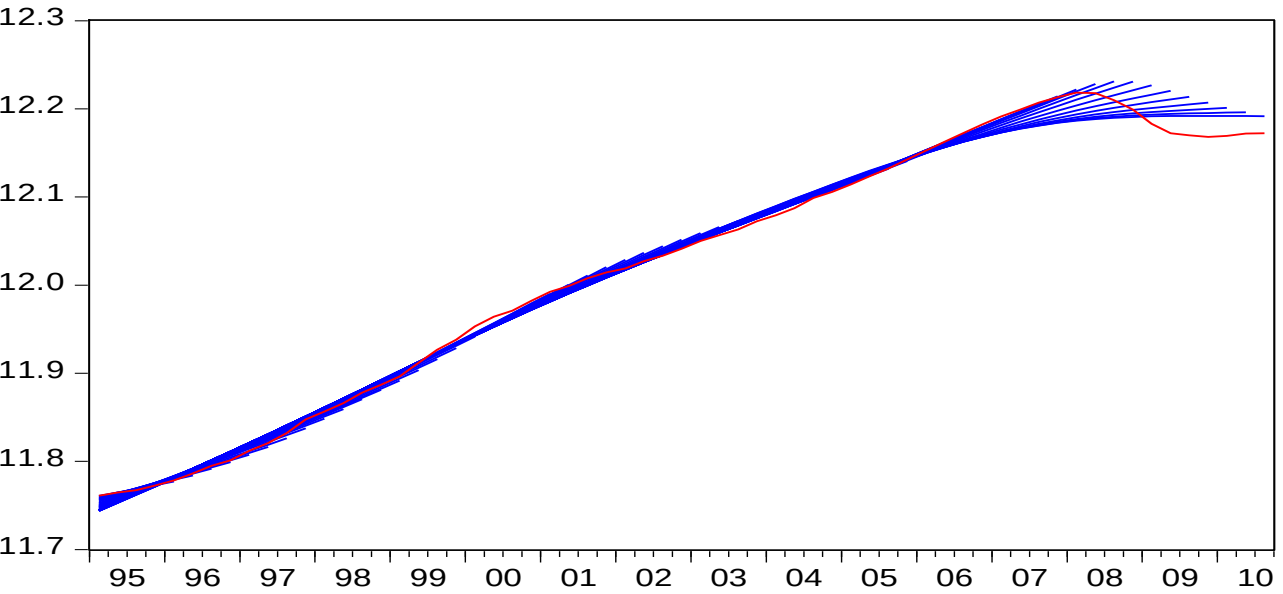


Greece

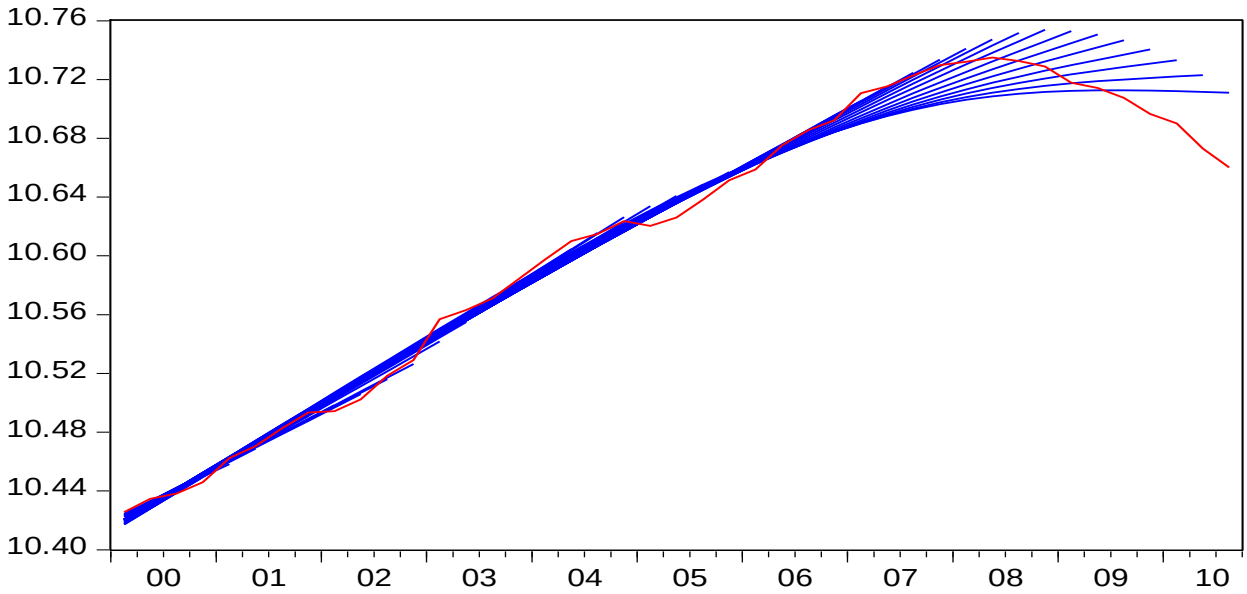
(Log GDP and Recursive HP)



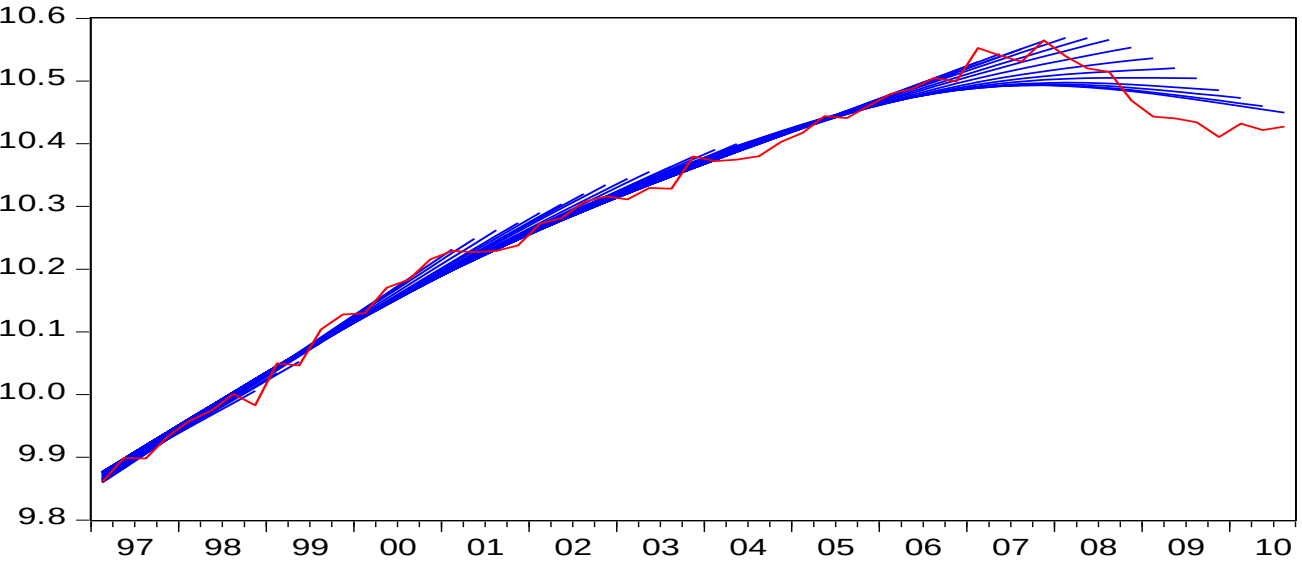
Spain
(Log GDP and Recursive HP)



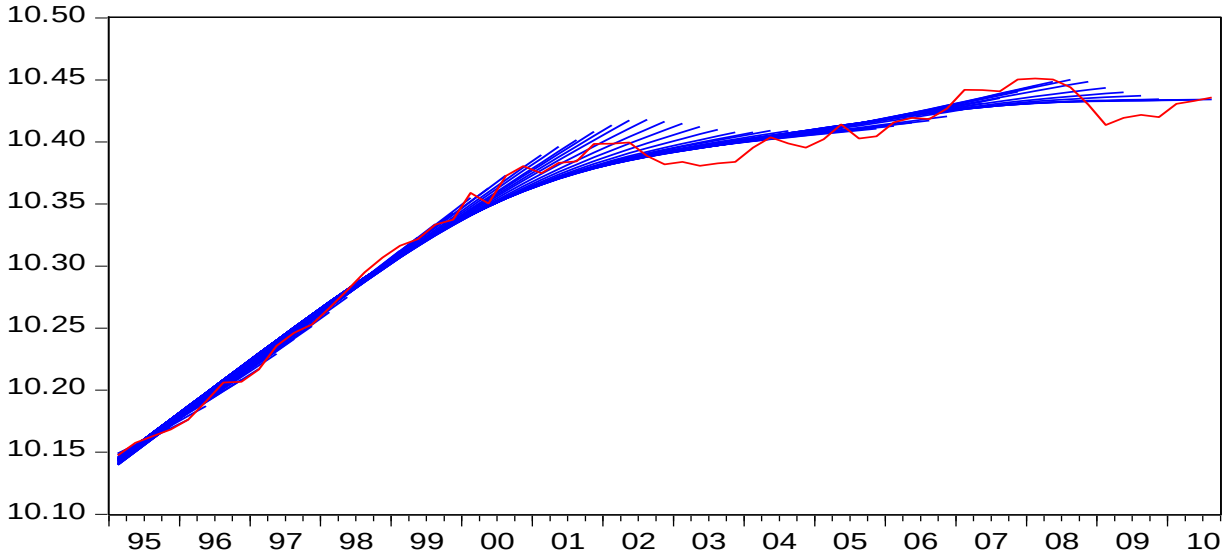
Greece
(Log GDP and Recursive HP)



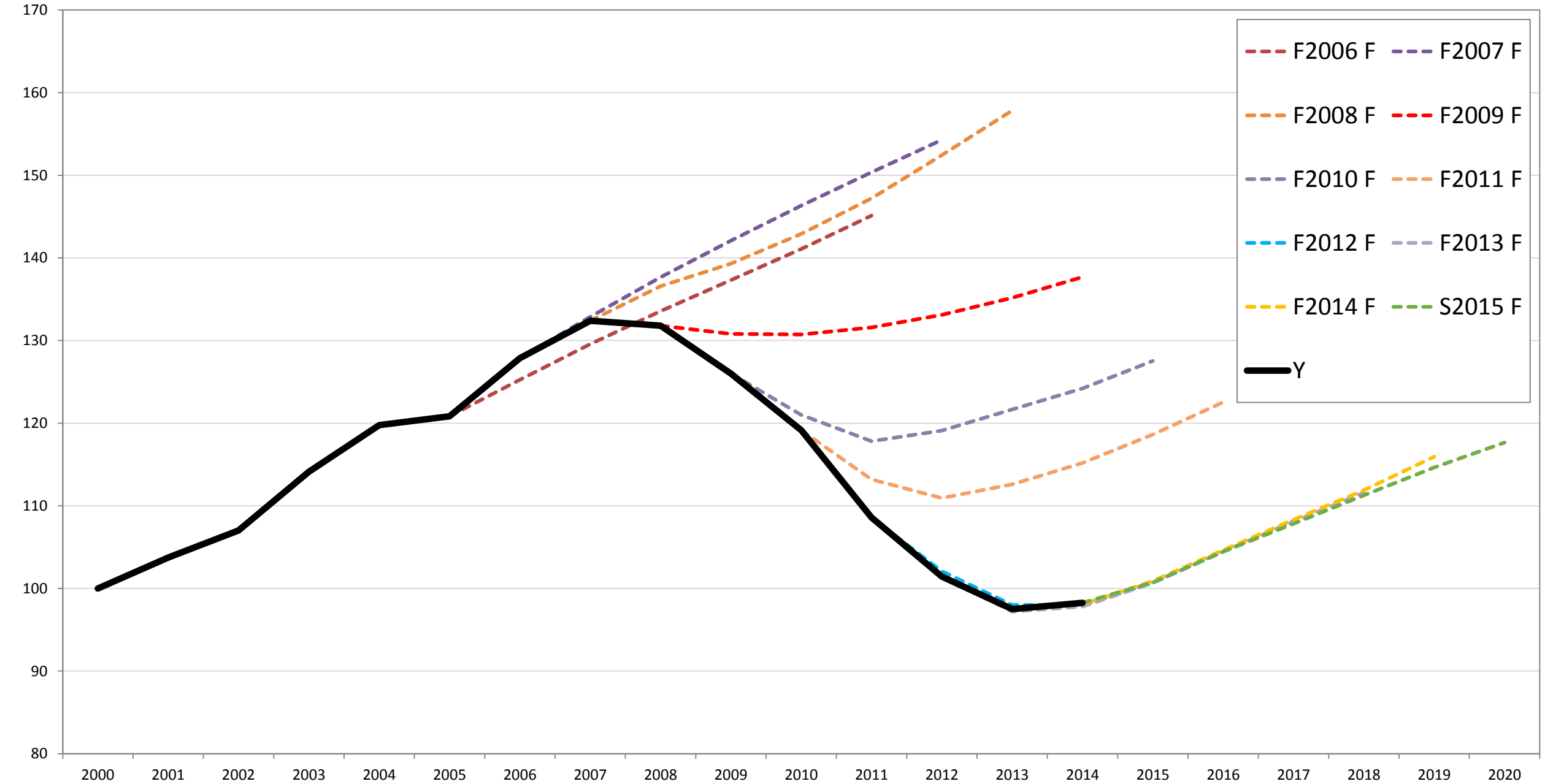
Ireland
(Log GDP and Recursive HP)



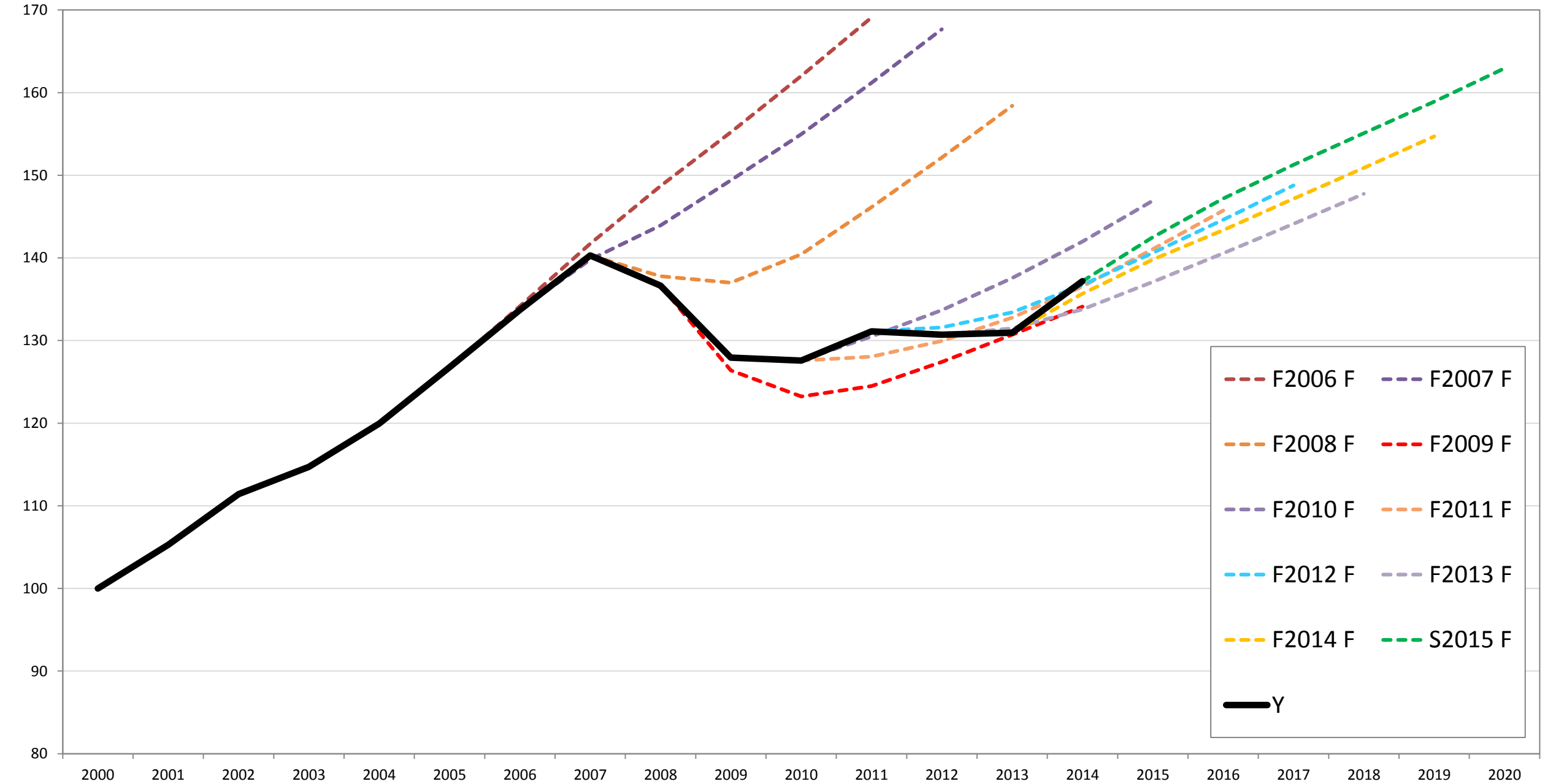
Portugal
(Log GDP and Recursive HP)



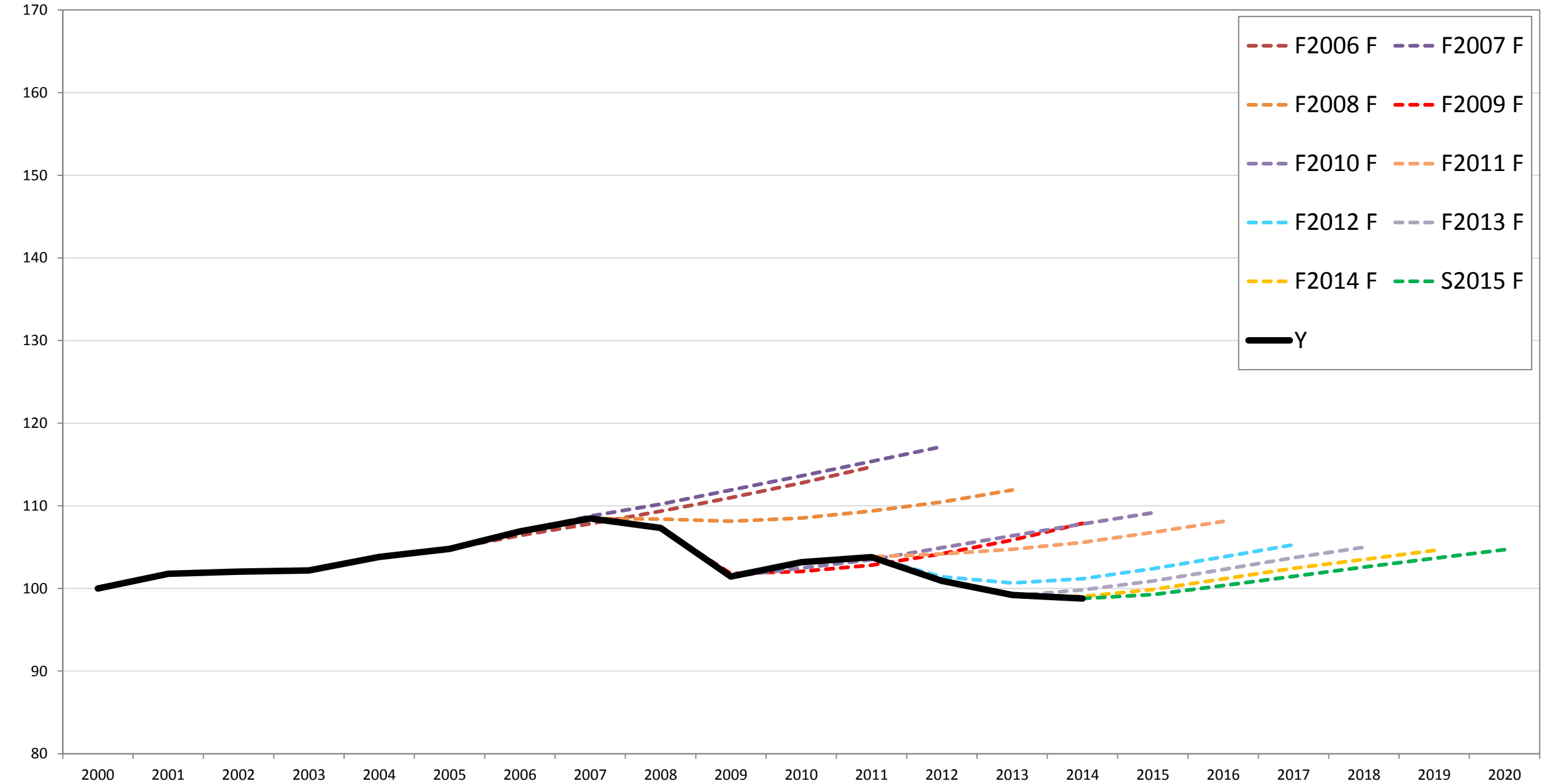
GDP and Projections WEO IMF: Greece



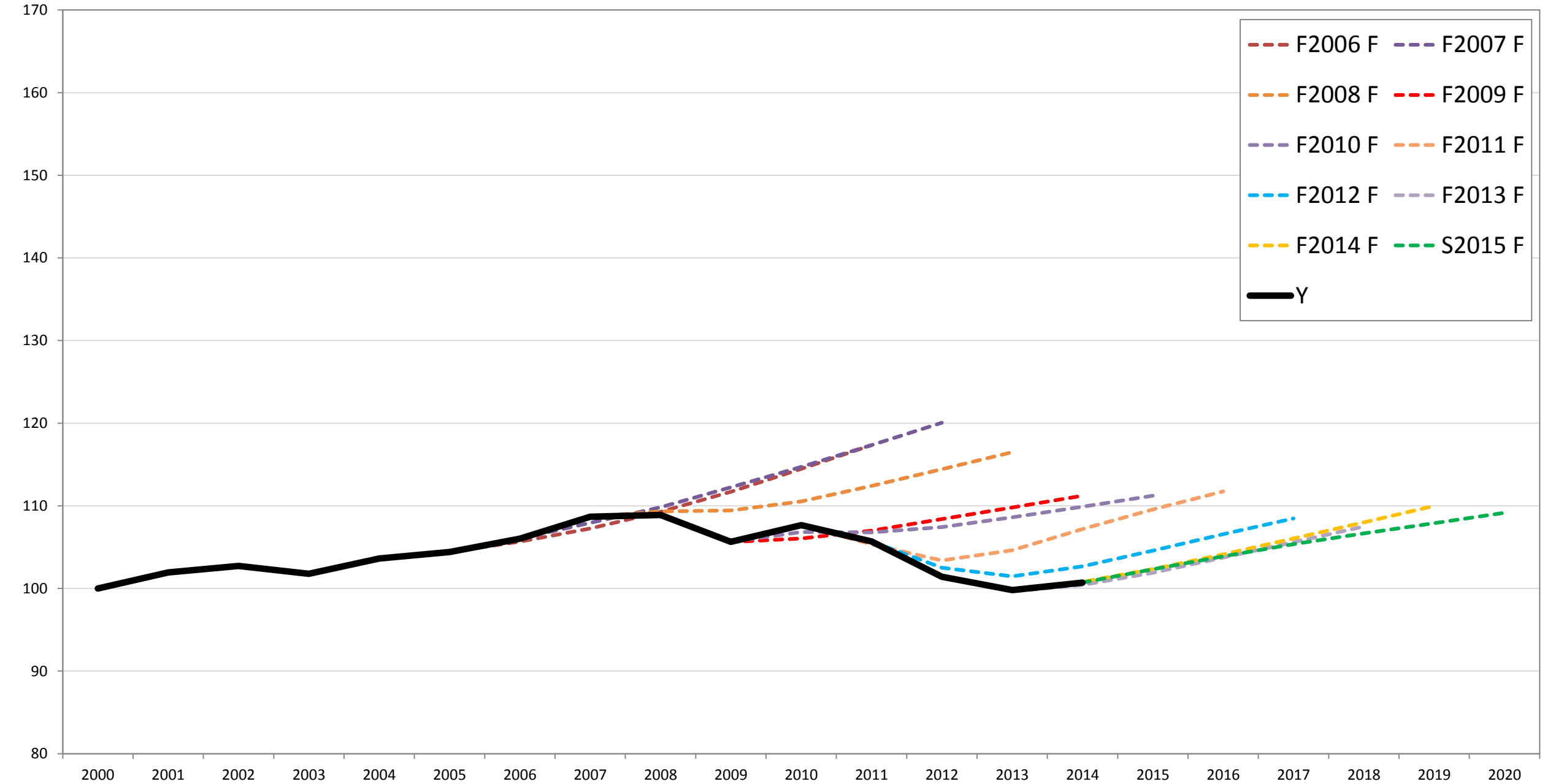
GDP and Projections WEO IMF: Ireland



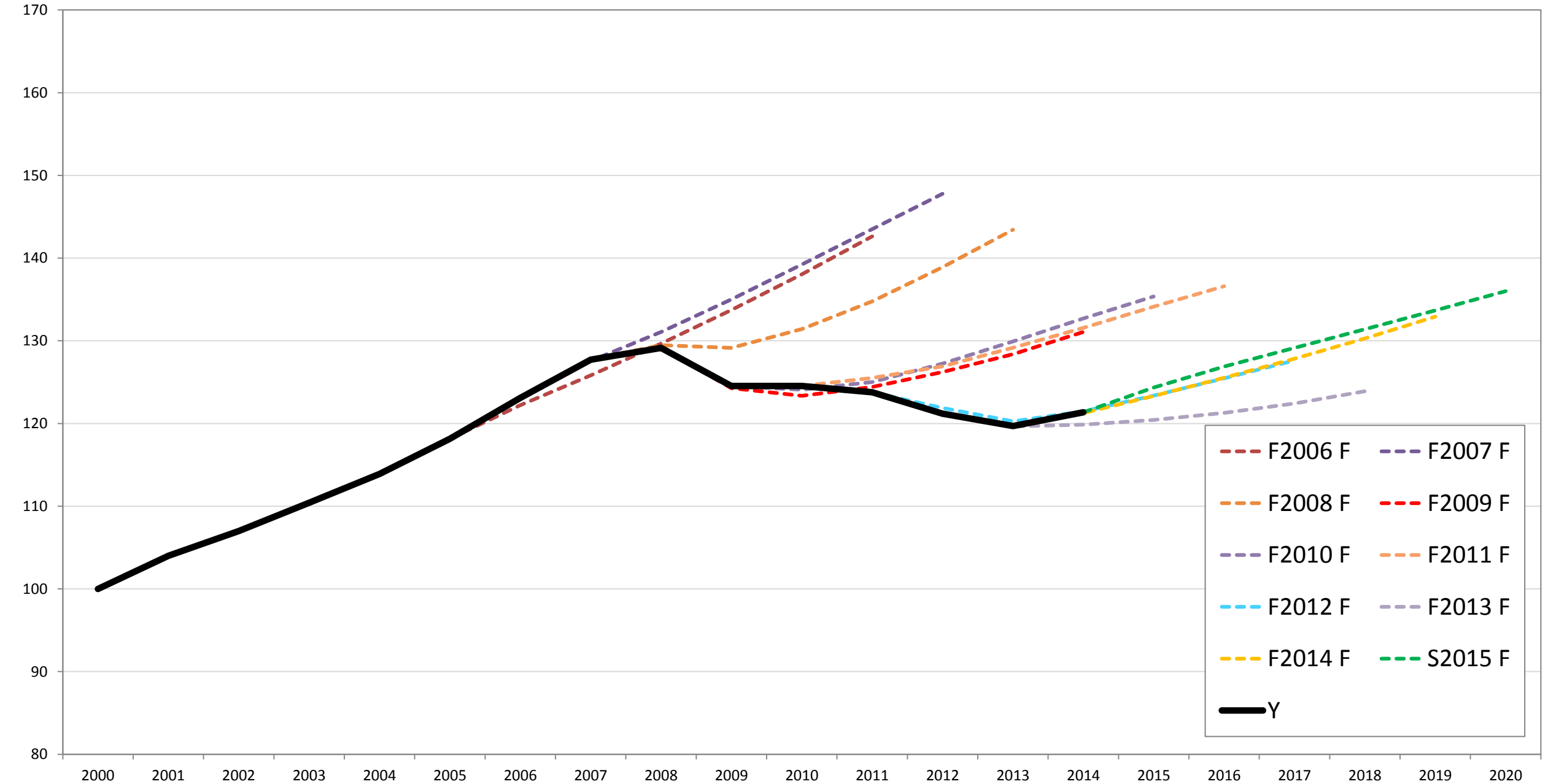
GDP and Projections WEO IMF: Italy



GDP and Projections WEO IMF: Portugal



GDP and Projections WEO IMF: Spain



Trends, cycles, crises

Trends, cycles, crises

- Crises in economies with very different financial systems:
  - Based on bank intermediation or capital markets, sophisticated and diversified or simple and narrow asset structure, domestic or foreign unit of denomination (although contract “dollarization” can be important source of vulnerability: in coonection with history of monetary instability).
- Monetary policy potentially among main actors in generation of crises. But crashes in economies without (or very limited) independent monetary policies.
- Also: necessary interaction with wrong expectations (always a “well adapted” response to any interest rate path; possible misallocations, but no perfect foresight debt crisis).

Trends, cycles, crises

- Incentive problems typically visible in crises: fraud, moral hazard from expected bailouts, biased advice. But crisis requires error somewhere, and probably, of a non- trivial kind:

" When it is too late, the dupes discover scandals…But probably these frauds could never have become so great without the original starters of real opportunities to invest lucratively. There is always a very real basis for the 'new era' psychology before it runs away with all its victims" (I. Fisher, 1933).

Trends, cycles, crises

- Learning about trends as source of fluctuations, especially when indications of structural change (DH-PS, 1998, DH-MK-PS, 2001, MG 2013, Nakamura et al., 2017).

- General problem, both analytical and practical: “making statistics out of history”. What is relevant sample? Practical matter: what “insurance” to buy and at what price for what event…

Trends, cycles, crises

- Related to discussions on “paradoxes” in asset prices: equity premium, too low risk- free rates (question, also with practical relevance: how does one actually, and “rationally” identify absence of risk?).

- For the orders of magnitude of observed performance of developed economies “between crises” (say, 2% average per capita growth with a standard deviation of 2%), standard risk aversion coefficients: not enough variability in the growth data to rationalize yield levels and spreads.

Trends, cycles, crises

- One argument for puzzles (Rietz, 1988, more recently Barro, 2005 and others): behavior influenced by perception of likelihood of “rare events” on negative end of distribution (assumes that “bad draw” implies losses on equity but maintains risk- free property of bonds). Portfolio choices in “normal times” more prudent than implied by observed distributions.

Trends, cycles, crises

- Question: how to “rationally” anticipate likelihood of rare events. What is relevant sample?

- Issue addressed by Weitzman (2007).

Argument: structural parameters time-varying. Learning does not converge to “true parameters”: when add more observations, old data become obsolete.

The size of the “useful” sample does not tend to infinity; priors “never go away”.

Trends, cycles, crises

- Implication: with uncertainty about underlying parameters, thickened tail of distribution for projected consumption growth, should create “fear factor effect” on asset returns.

- Result depends on recognition by the agent of the fat tails generated by learning about the distribution of growth rates (W. stresses changes of variance over time).

Trends, cycles, crises

Some open questions:

- What are the procedures actually used by agents to forecast incomes
- Conditions for overreaction to news
- How agents evaluate the precision of their beliefs about future
- How expectations of different variables interrelated

Sovereign Debt Crises

Sovereign Debt Crises
Comments on evolution and treatment

- Fiscal problems may be addressed by:
  - Raising primary balances;
  - Cutting real values of debt through inflation (in the unit in which obligations denominated…);
  - Redefining contracts through explicit restructuring.

Sovereign Debt Crises
Comments on evolution and treatment

- In normally running economies (esp: private balance sheets in order), with moderate requirements for fiscal retrenchment, management of revenues and spending can correct imbalances w.o. strong economic/social complications.

Sovereign Debt Crises
Comments on evolution and treatment

- However, adjustment not only has social/political limits (hard to define: much tolerance observed in some economies in crisis).
- If public finances were in very bad state and recession (esp. if menace of debt-deflation effects), potential downwards spirals of budget cuts and lower receipts in economy, may induce attempts to sustain demand for debt by costly signaling through announcement of reforms designed and decided in haste.
- But at some point asset holders will also demand assurances that the economy will be able to recover and grow.

Sovereign Debt Crises
Comments on evolution and treatment

- Cases where price level drift over relatively long period helped reduce debt from high levels (e.g. USA post WWII), requires specific conditions:
  - disposition to hold govt. debt along process,
  - bounded inflationary expectations;

→ implies favorable perceptions about economy´s prospects and about macro policies.

Sovereign Debt Crises
Comments on evolution and treatment

- High inflations:
  - Fiscal inconsistencies as central aspect,
  - Unsystematic resolution of conflicting demands on policies.
  - Disruptive processes, costly for growth and distribution.

Sovereign Debt Crises
Comments on evolution and treatment

- Open discussion about costs for countries of sovereign debt restructuring; rich literature on topic.
- In any case: observed strong reluctance to “take the plunge” (questions on moral hazard arguments). Understandable:
  - Much uncertainty about outcome;
  - Option value of delaying decision even if critical state;
  - Signalling of state of need: not likely to be done if not in visible emergency.
  - Costs of delay (“if it were done when it´s done, then t´were well it were done quickly”…).
  - But hard to establish what defines a limit and to agree beforehand on when to quit the game; cases where default avoided (Brazil´s yield spread 2002 above 2000 pts.)

Sovereign Debt Crises
Comments on evolution and treatment

Incomplete contracts.

- Non-trivial definition of default (as non- performance of actions other parties could rightly expect in relevant circumstances): contingency clauses implicit in risk premia, but no specification of when and how would be triggered.
- Ex post: requires “rational reconstruction” of beliefs of parties. In some way for another, it´s done for private bankruptcies.
- But ambiguities when no immediately apparent shock, and solvency problems reflect “unrealized good news”.

Sovereign Debt Crises
Comments on evolution and treatment

- If default eventually happens, restructuring process to be addressed. May be associated with other major economic changes (e.g. in monetary system). Big issue: mix of policies in aftermath.

- Debt renegotiations:
  - Cases of rapid agreement, but others with delays of several years (e.g. Latin American debts after 1980´s crises).
  - Uncertainty about outcomes costly for economy, but circumstances (esp. no pressing financing requirements after default) where need not prevent recovery (e.g. Argentina in 2000´s).

Sovereign Debt Crises
Comments on evolution and treatment

- Different criteria from point of view of economies facing debt restructuring: sustainability, conformity to speed up re-access to markets.
- Costs of default seem to have component that increases with size of haircut.
- In any case, sustainability of post-restructuring obligations crucial consideration. May have contingent debts, but possible questions about valuation.

Sovereign Debt Crises
Comments on evolution and treatment

- IfIs and governments of central economies often involved in debt crises of countries of the periphery.
- Complicated game. Variety of possible specific objectives pursued by third parties:
  - maximize repayment (interests of corresponding creditors),
  - reduce international financial impacts,
  - contain macro propagation across economies,
  - help out crisis country,
  - send messages to agents of different kinds.
- Also: possibly different interpretations of economic mechanisms and prospects (liquidity vs solvency, feasibility and effects of adjustment, overall consequences of default…).

Sovereign Debt Crises
Comments on evolution and treatment

- Influence, role of international players case-specific. Difficult to imagine and define a workable general purpose setup.

- But international attitudes important to determine features of crises resolution and debt restructuring if it happens. Reputational consequences. Would imply practical relevance of interpretation of crises.

Concluding Remarks

Concluding remarks

- Questions concretely motivated by crises:
  - Probabilities of large expectational biases in certain sets of circumstances (difficult to discuss about “insurance policies” without notion of chances of disturbance). Asks for specific analysis of learning, expectations, aiming for practical, usable propositions; also, analysis of microfoundations as behavior of multiple interacting agents.
  - Parameters determining depth, intensity of propagation of financial disturbances. Calls for analysis of properties of credit networks (growing literature in that direction).

Concluding Remarks

- Large-scale events that put into question defining features of economic organization and behavior. Raise major questions for macro analysis and policy design.

- When crises erupt: far-reaching decisions under pressure and uncertainty. Tradeoffs between cautious approach and “resetting system”; scarcity of dependable criteria on which to rely.

- Dealing with emergencies and looking ahead. Beyond “competition of approaches” (sign of lack of firm knowledge), interest in considering ranges of relevance of modes of analysis.

Concluding Remarks

- Some topics for exploration:
  - Likelihood of large expectational biases in certain sets of circumstances; asks for specific analysis of learning, expectations, aiming for practical, usable propositions.
  - Parameters determining depth, intensity of propagation of financial disturbances; properties of credit networks.
  - Determining features of events (“types of crisis”) to guide policy treatments over time.
  - Specific mapping of tradeoffs to help rationalize policy choices.

Thank you!