Fixed vs. Flexible Exchange Rates with Secular Stagnation*

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Last Version

Abstract

This paper reassesses the costs and benefits of fixed vs. flexible exchange rates with a global excess of saving over investment demand (secular stagnation), empirically and theoretically. Unlike in the Mundell-Fleming model, fiscal policy is more effective under flexible exchange rates than fixed, and current account imbalances On the cost side, Keynesian stimulus leads to greater trade imbalances under fixed exchange rates: fixed exchange rates facilitate the international financing of current account deficits, as external investors do not face devaluation risk. As a result, fixed exchange rates make the underprovision of fiscal stimulus more likely, as countries are more likely to free-ride on other countries' efforts at fiscal stimulus. On the benefits side, fixed exchange rates increase the efficacy of Keynesian stimulus: they lower exchange rates lower the cost of credit, as borrowers do not have to pay the ex-ante risk of devaluation (or inflation), which is expansionary (commitment not to inflate, or to devalue).

Keywords: Monetary union, Fixed Exchange Rates, Capital Controls, Tariffs.
JEL classification:

1 Introduction

The classical analysis of fixed versus flexible exchange rates is usually cast Mundell-Fleming model based on sticky prices. In this paper, I revisit this classic question using old Keynesian ideas linked to the excess of saving over investment demand (secular stagnation or dynamic inefficiency).

A key parameter which governs the effectiveness of stimulus policy is the propensity to import. The propensity to import governs how much Keynesian stimulus "leaks" to other countries, in the form of higher imports, resulting in lower net exports and greater substraction from Gross Domestic Product. There are two ways to see the effic

Mundell (1963) Fleming (1962)

In the classical trade-off by Mundell (1961), the costs of a monetary union are only arising from not sharing the same exchange rate, which shuts down the boost to exports done by a depreciation when there is a crisis. Moreover, a counry in a currency union cannot use its monetary policy to smooth out shocks. This paper shows that in a fixed exchange rate regime, macroeconomic fundamentals (consumption?) are more volatile because capital inflows do not fear the risk of a devaluation. Therefore, for a given fiscal shock – for example – there is a much bigger response in a currency union, and the stimulative aggregate demand effects are much more spread than if not. Note indeed that in the case of government debt, the principal is also important: the full sequence of all interest rates, and the full sequence of all exchange rates, matters, in order to determine the value of the debt.

Fixed exchange rates, without a possibility of devaluation, allow countries to

Devaluations as tariffs. Devaluation before a fiscal stimulus allows to turn demand to internal ->

When done after a devaluation, a stimulus policy is very successful.

*This is preliminary and incomplete, please read the most recent version of the draft here.
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TABLE 12-1

The Mundell–Fleming Model: Summary of Policy Effects

	EXCHANGE-RATE REGIME					
	FLOATING			FIXED		
	IMPACT ON:					
Policy	***Y***	***e***	***NX***	***Y***	***e***	***NX***
Fiscal expansion	0	↑	↓	↑	0	0
Monetary expansion	↑	↓	↑	0	0	0
Import restriction	0	↑	0	↑	0	↑

Note: This table shows the direction of impact of various economic policies on income *Y*, the exchange rate *e*, and the trade balance *NX*. A "↑" indicates that the variable increases; a "↓" indicates that it decreases; a "0" indicates no effect. Remember that the exchange rate is defined as the amount of foreign currency per unit of domestic currency (for example, 100 yen per dollar).

Figure 1: (ref:RomerRomer2004-CPIAUCSL)

Another reason is that with the possibility of devaluation, foreign investors can actually be expropriated. The logic is the following:

$$\bar{E} = \frac{E \cdot P}{P^*}$$

Moreover, countries that have a fear of devaluation

Exchange Rates

2 Data

2.1 Net Exports on GDP

Exchange Rate Regime	Slope	t-stat	Adj. R2	N
Fixed / Peg	-0.06***	-3.0	62.3%	702
Crawling Peg	-0.16***	-8.4	61.9%	438
Crawling Band	-0.16***	-4.8	63.5%	464
Floating	-0.05***	-2.8	67.4%	144

Stargazer allows to display results more efficiently:

Table 1: Net Exports and GDP

	Dependent variable:			
	Net Exports			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
GDP	-0.064^{***}	-0.165^{***}	-0.159^{***}	-0.055^{***}
	(0.021)	(0.020)	(0.033)	(0.019)
Constant	0.092^{***}	0.202^{***}	0.187^{***}	0.103^{***}
	(0.025)	(0.022)	(0.055)	(0.020)
Observations	734	468	495	150
R^2	0.639	0.643	0.657	0.685
Adjusted R^2	0.623	0.619	0.635	0.674
Residual Std. Error	0.049	0.032	0.045	0.019
F Statistic	40.023^{***}	27.187^{***}	29.655^{***}	62.519^{***}

Note: *p<0.1; **p<0.05; ***p<0.01

Exchange Rate Regime	Slope	t-stat	Adj. R2	N
Fixed / Peg	0.45***	6.2	70.6%	702
Crawling Peg	0.24***	5.2	72.9%	438
Crawling Band	0.21***	4.1	68.7%	464
Floating	-0.06**	-2.5	79.3%	144

Exchange Rate Regime	Slope	t-stat	Adj. R2	N
Fixed / Peg	0.51***	8.6	72.5%	702
Crawling Peg	0.39***	9.6	79.7%	438
Crawling Band	0.34***	6.7	68.4%	464
Floating	-0.02	-0.6	58.5%	144

Exchange Rate Regime	Slope	t-stat	Adj. R2	N
Fixed / Peg	0.51***	8.6	72.5%	702
Crawling Peg	0.39***	9.6	79.7%	438
Crawling Band	0.34***	6.7	68.4%	464
Floating	-0.02	-0.6	58.5%	144

Exchange Rate Regime	Slope	t-stat	Adj. R2	N
Fixed / Peg	-0.06	-1.3	0.1%	732
Crawling Peg	-0.17***	-4.7	4.3%	466
Crawling Band	-0.25***	-4.0	3%	493
Floating	-0.2***	-3.0	5.3%	148

Table 2: Net Exports and Consumption

	Dependent variable:			
	Net Exports			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	−0.410***	−0.367***	−0.403***	−0.132***
	(0.023)	(0.028)	(0.030)	(0.027)
Constant	0.238***	0.273***	0.255***	0.118***
	(0.016)	(0.020)	(0.043)	(0.014)
Observations	734	468	495	150
R^2	0.747	0.704	0.740	0.715
Adjusted R^2	0.736	0.684	0.723	0.705
Residual Std. Error	0.041	0.030	0.039	0.018
F Statistic	66.803***	35.887***	44.011***	72.264***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 3: GDP and Consumption

	Dependent variable:			
	Gross Domestic Product			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	1.113***	1.306***	0.537***	1.702***
	(0.034)	(0.053)	(0.047)	(0.039)
Constant	0.425***	0.168***	0.671***	0.102***
	(0.023)	(0.038)	(0.066)	(0.021)
Observations	734	468	495	150
R^2	0.645	0.723	0.412	0.939
Adjusted R^2	0.630	0.704	0.374	0.937
Residual Std. Error	0.059	0.057	0.060	0.027
F Statistic	41.220***	39.391***	10.856***	442.936***
Note:				*p<0.1; **p<0.05; ***p<0.01

2.2 Exports on GDP

2.3 Imports on GDP

2.4 Imports on GDP

2.5 Net Exports on GDP

2.6 Net Exports on Consumption

2.7 GDP on Consumption (less efficient)

Table 4: Investment and Consumption

	Dependent variable:			
	Investment			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	0.319***	0.483***	0.057	0.775***
	(0.018)	(0.047)	(0.038)	(0.028)
Constant	0.008	−0.148***	0.140***	−0.188***
	(0.012)	(0.033)	(0.052)	(0.015)
Observations	734	468	490	150
R^2	0.531	0.541	0.243	0.921
Adjusted R^2	0.510	0.510	0.193	0.918
Residual Std. Error	0.032	0.049	0.048	0.019
F Statistic	25.599***	17.787***	4.904***	335.968***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 5: Internal Demand and Consumption

	Dependent variable:			
	Internal Demand			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	1.523***	1.673***	0.939***	1.834***
	(0.026)	(0.058)	(0.054)	(0.031)
Constant	0.187***	−0.104**	0.416***	−0.016
	(0.018)	(0.042)	(0.076)	(0.017)
Observations	734	468	495	150
R^2	0.873	0.775	0.619	0.970
Adjusted R^2	0.868	0.760	0.595	0.969
Residual Std. Error	0.047	0.062	0.070	0.021
F Statistic	156.011***	52.093***	25.151***	927.520***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 6: Unemployment and Consumption

	Dependent variable:			
	Unemployment			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	-9.599^{***}	-7.876^{***}	-7.814^{***}	-11.082^{***}
	(2.644)	(2.904)	(1.985)	(1.938)
Constant	6.701^{***}	9.902^{***}	13.792^{***}	12.800^{***}
	(1.630)	(1.773)	(2.295)	(1.048)
Observations	509	330	347	131
R^2	0.542	0.710	0.859	0.643
Adjusted R^2	0.517	0.691	0.850	0.629
Residual Std. Error	3.042	2.323	2.033	1.315
F Statistic	21.922^{***}	37.776^{***}	99.346^{***}	45.053^{***}
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 7: Manufacturing Emp and Consumption

	Dependent variable:			
	Manufacturing Emp			
	Fixed / Peg	Crawling Peg	Crawling Band	Flexible
	(1)	(2)	(3)	(4)
Consumption	0.147^{***}	0.179^{*}	-0.154^{***}	-0.345
	(0.030)	(0.094)	(0.045)	(0.715)
Constant	0.104^{***}	0.198^{***}	0.391^{***}	0.445
	(0.017)	(0.047)	(0.030)	(0.420)
Observations	334	92	108	16
R^2	0.754	0.889	0.886	0.932
Adjusted R^2	0.741	0.872	0.875	0.921
Residual Std. Error	0.024	0.017	0.020	0.023
F Statistic	57.079^{***}	52.682^{***}	84.285^{***}	88.882^{***}
Note:				*p<0.1; **p<0.05; ***p<0.01

1. who finances the bond buying. If it's local production that's stimulated, then the extra saving can perfectly finance the bond buying
2. if not, then it's the foreign country that is now saving more and they can buy my government bonds as a store of value.

If consumers want to buy foreeign goods, then there are two possibilities: either they buy foreign currency, with domestic currency, which drives up the price of the foreign currency?

5 Exchange-rate Stabilization programs

Rebelo and Vegh (1995)

6 Countries which peg to the dollar

Problems indeed: capital flows. It's good for trade, because it creates more security for exporters. Howeveer it makes you very sensitive to capital flows. Thus, conditional on exchange rate shocks, it's bad.

A risk of exchange rate depreciation is like a tarriff?

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A Figures

A.1 Euro Area Interest Rate Convergence

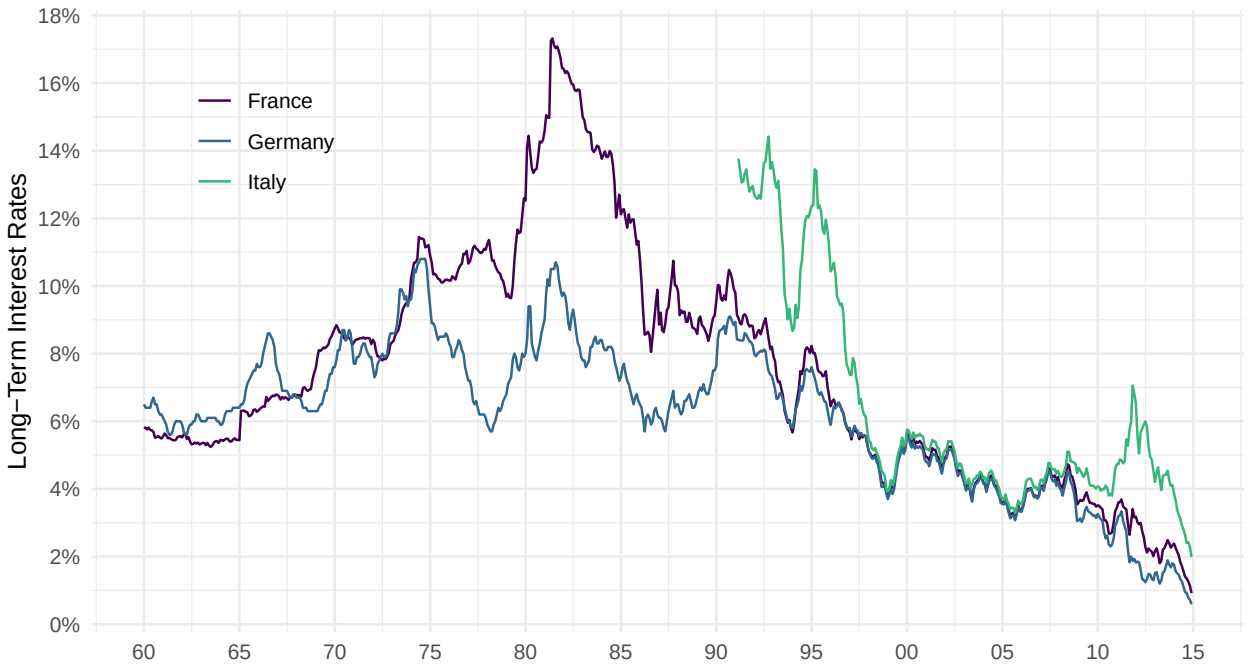

Figure 2: Long-Term Interest Rates

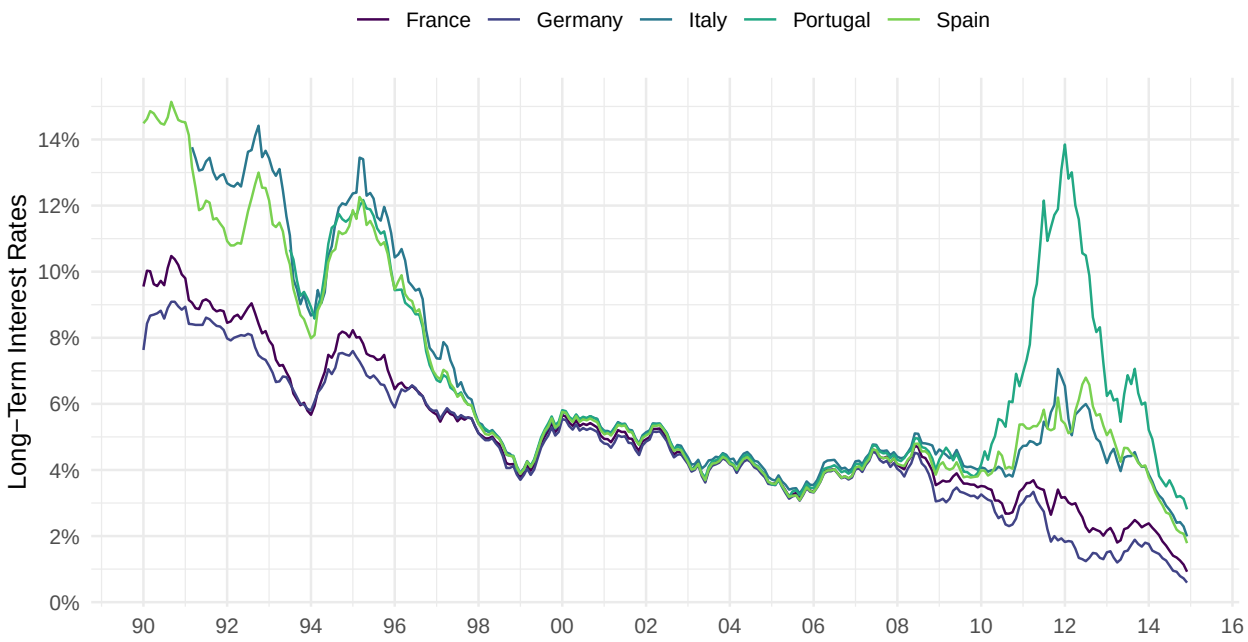

Figure 3: Long-Term Interest Rates (1990-2019)

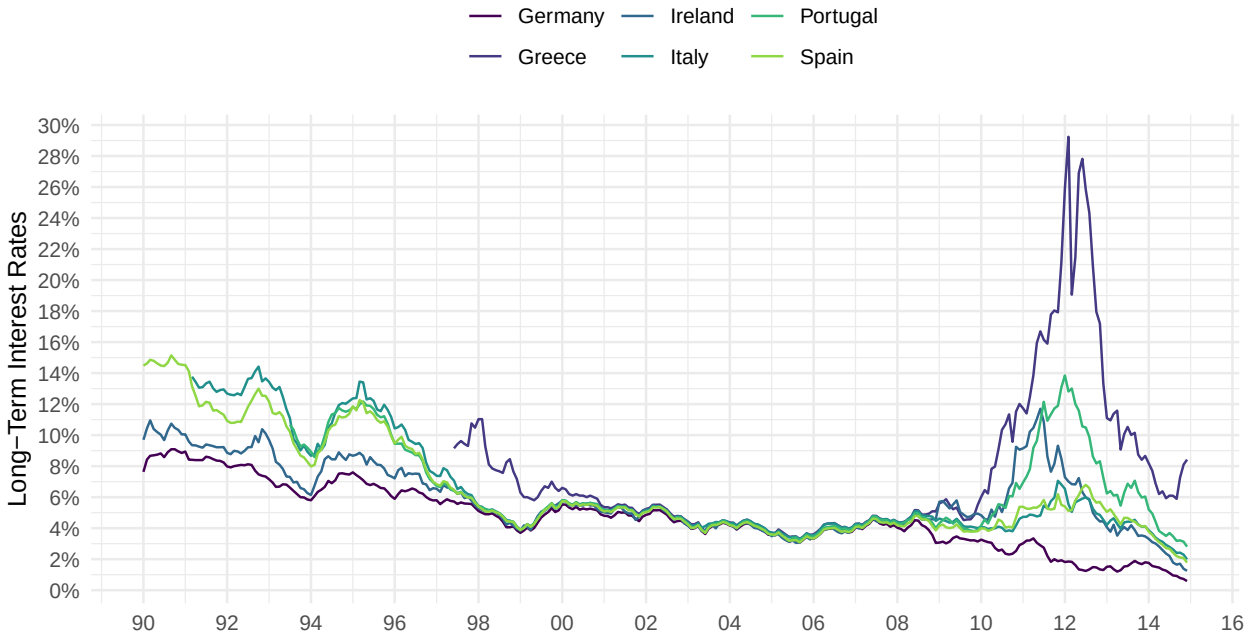

Figure 4: Long-Term Interest Rates in PIIGS and Germany (1990-2019)

A.2 Unit Labor Cost

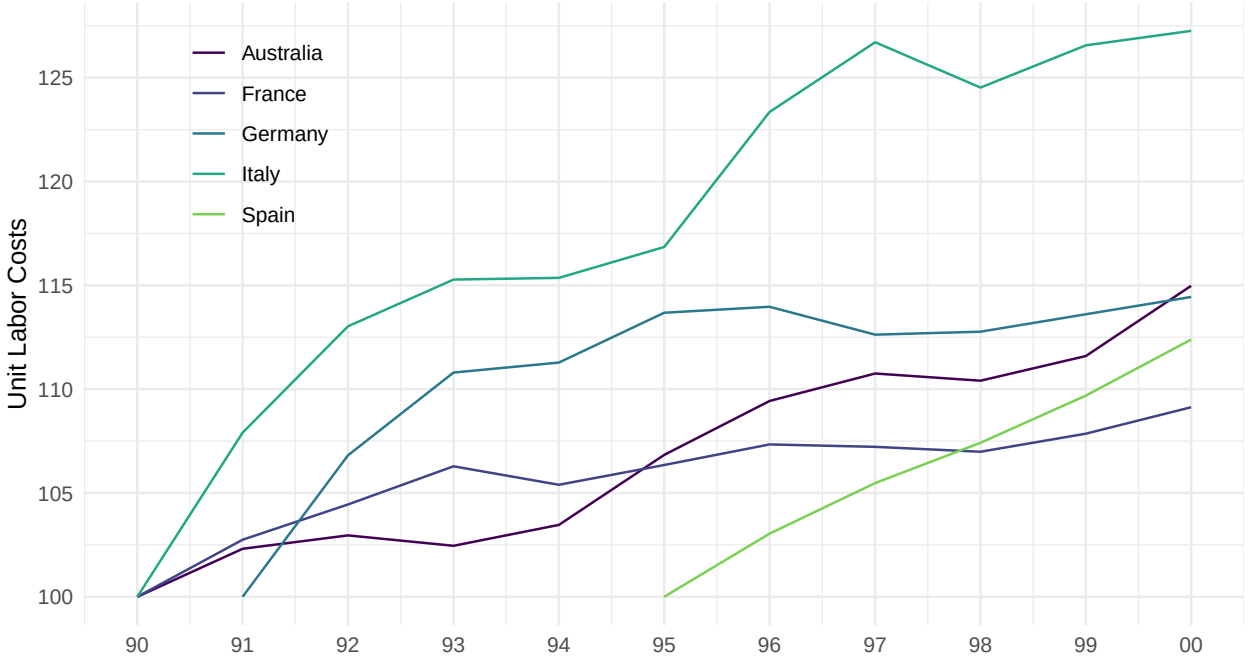

Figure 5: Unit Labor Costs (1990-2000)

Argentina 1982		
Variable	*Before*	*After*
p	100	49.6
TB/GDP	0.6%	3.8%
CA/GDP	−2.7%	−1.9%

Chile 1982		
Variable	*Before*	*After*
p	100	70.1
TB/GDP	−3.4%	2.1%
CA/GDP	−7.3%	−7.6%

Uruguay 1982		
Variable	*Before*	*After*
p	100	49.2
TB/GDP	−4.3%	3.8%
CA/GDP	−5.6%	−3.0%

Mexico 1994		
Variable	*Before*	*After*
p	100	77.9
TB/GDP	−4.0%	1.5%
CA/GDP	−6.5%	−1.0%

Indonesia 1997		
Variable	*Before*	*After*
p	100	53.2
TB/GDP	1.6%	14.4%
CA/GDP	−2.8%	4.5%

Korea 1997		
Variable	*Before*	*After*
p	100	73.7
TB/GDP	−1.5%	7.9%
CA/GDP	−2.6%	−7.1%

Malaysia 1997		
Variable	*Before*	*After*
p	100	71.6
TB/GDP	2.6%	25.4%
CA/GDP	−6.7%	12.8%

Thailand 1997		
Variable	*Before*	*After*
p	100	74.1
TB/GDP	−6.9%	7.7%
CA/GDP	−5.9%	10.2%

Turkey 2001		
Variable	*Before*	*After*
p	100	84.4
TB/GDP	−7.8%	−4.3%
CA/GDP	−1.5%	−0.6%

Figure 7: Crises episodes: Relative price of nontradable goods, trade balance, and current account (from Vegh (2013))

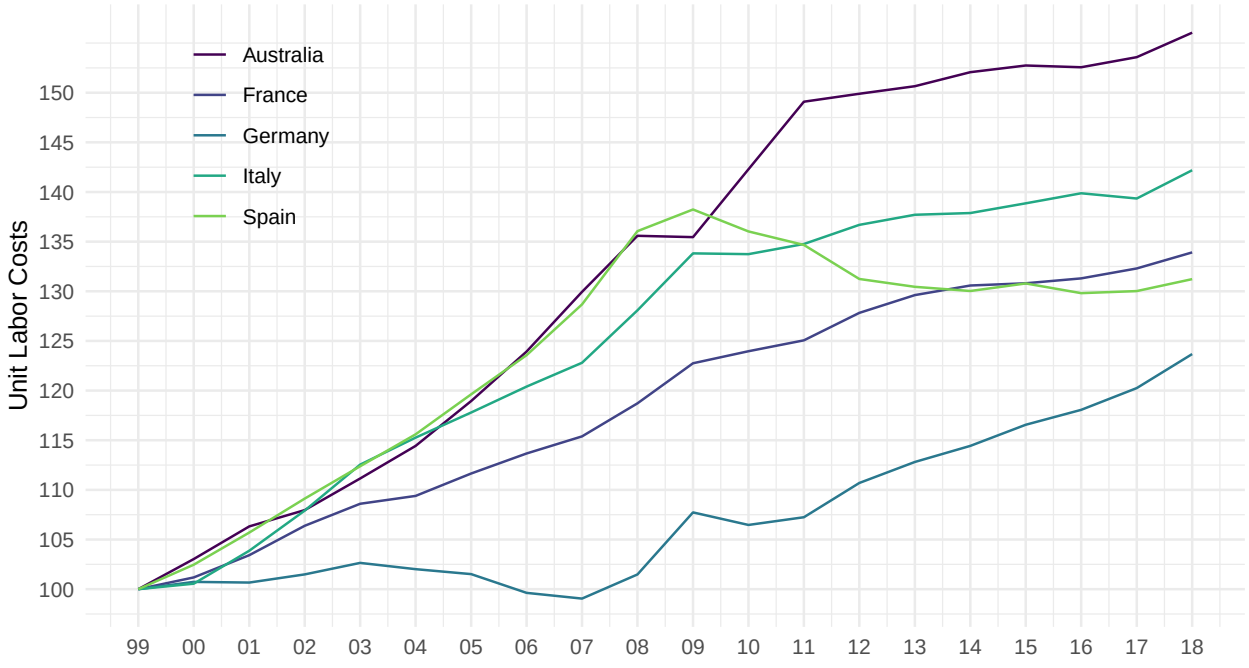

Figure 6: Unit Labor Costs (2000-2019)

B Exchange-Rate Based Stabilization: Crises

B.1 Argentina 1982

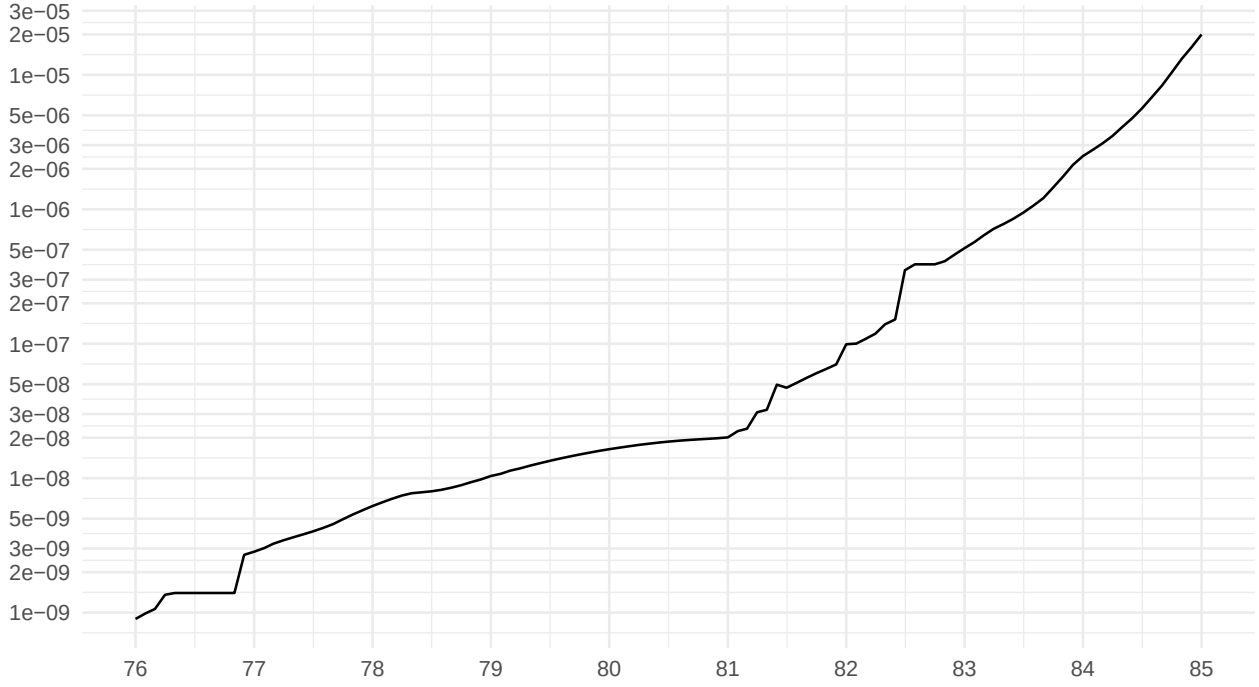

Figure 8: Argentina Exchange Rate (around 1982)

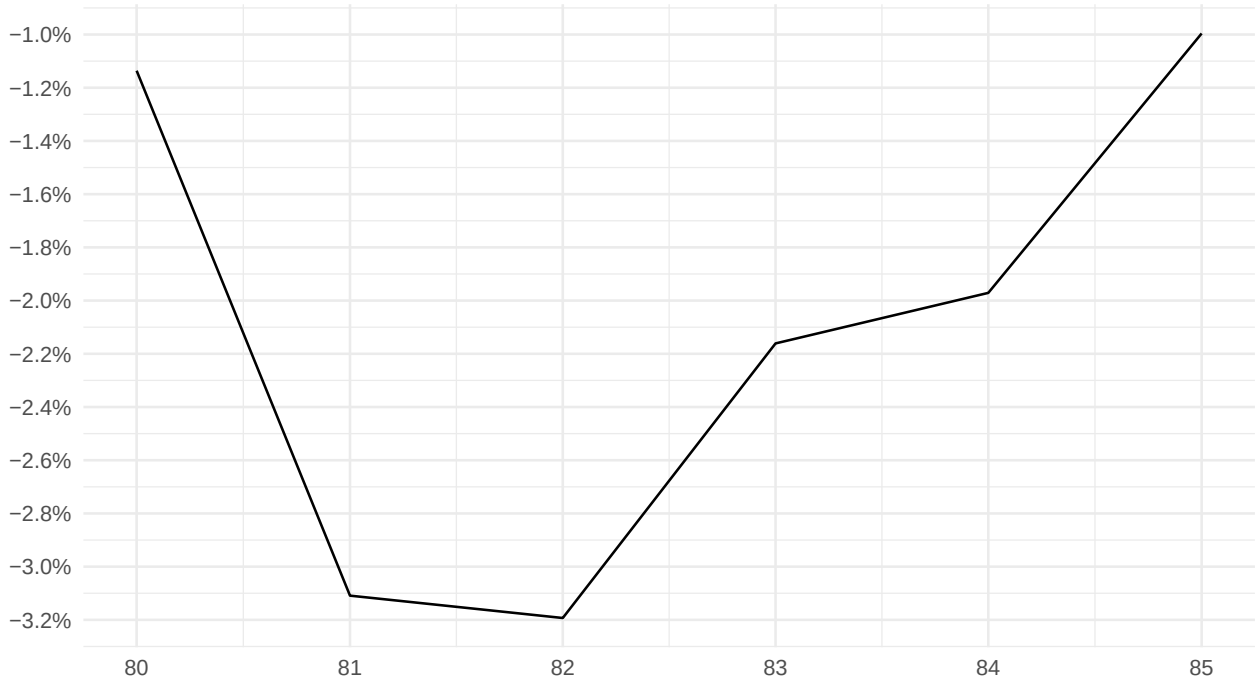

Figure 9: Argentina Current Account (around 1982)

B.2 Chile 1982

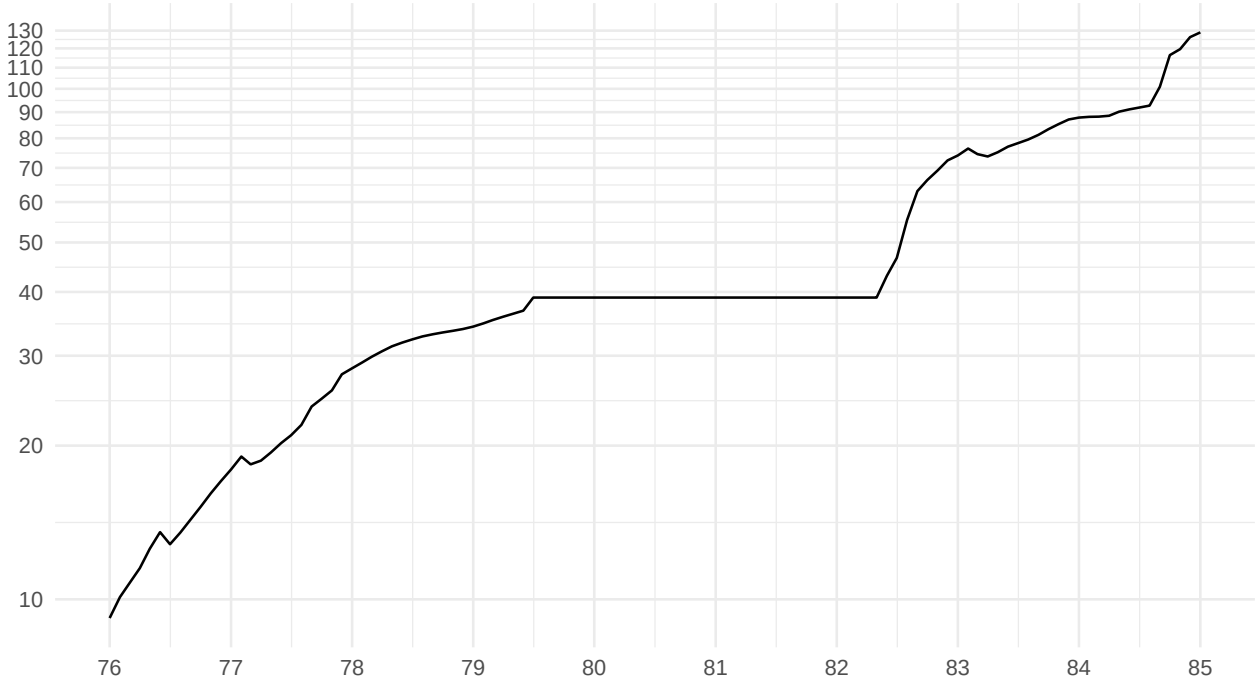

Figure 10: Chile Exchange-Rate (around 1982)

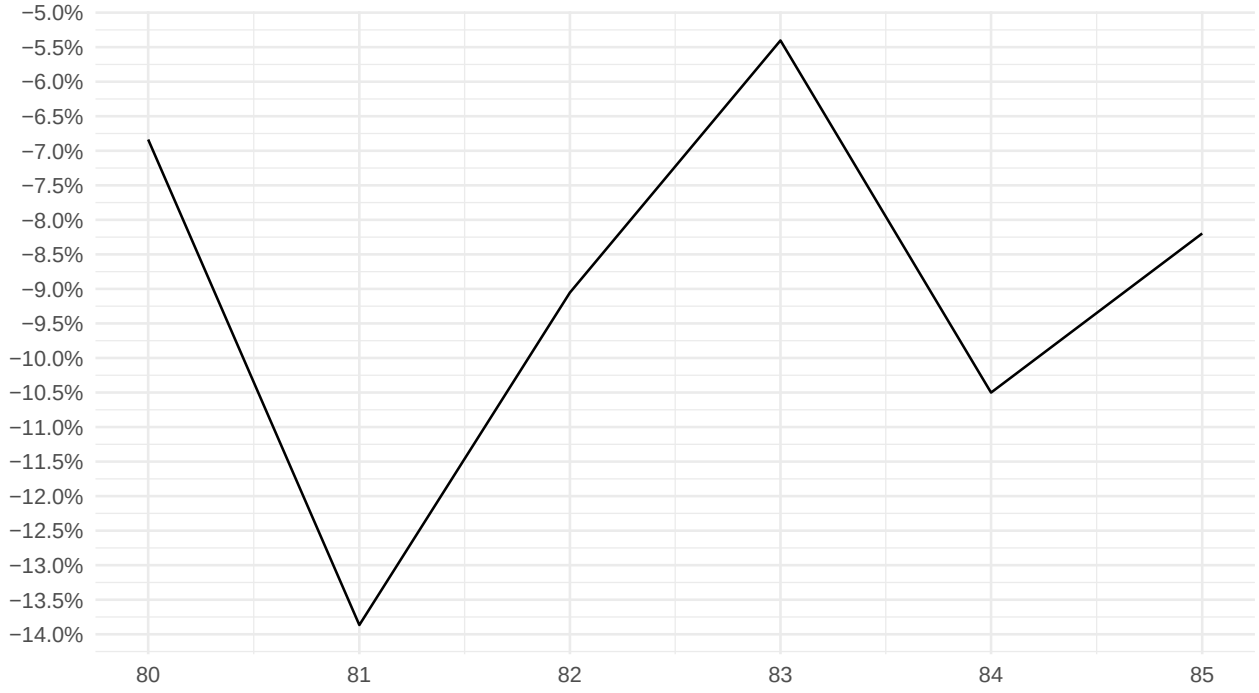

Figure 11: Chile Current Account (around 1982)

B.3 Uruguay 1982

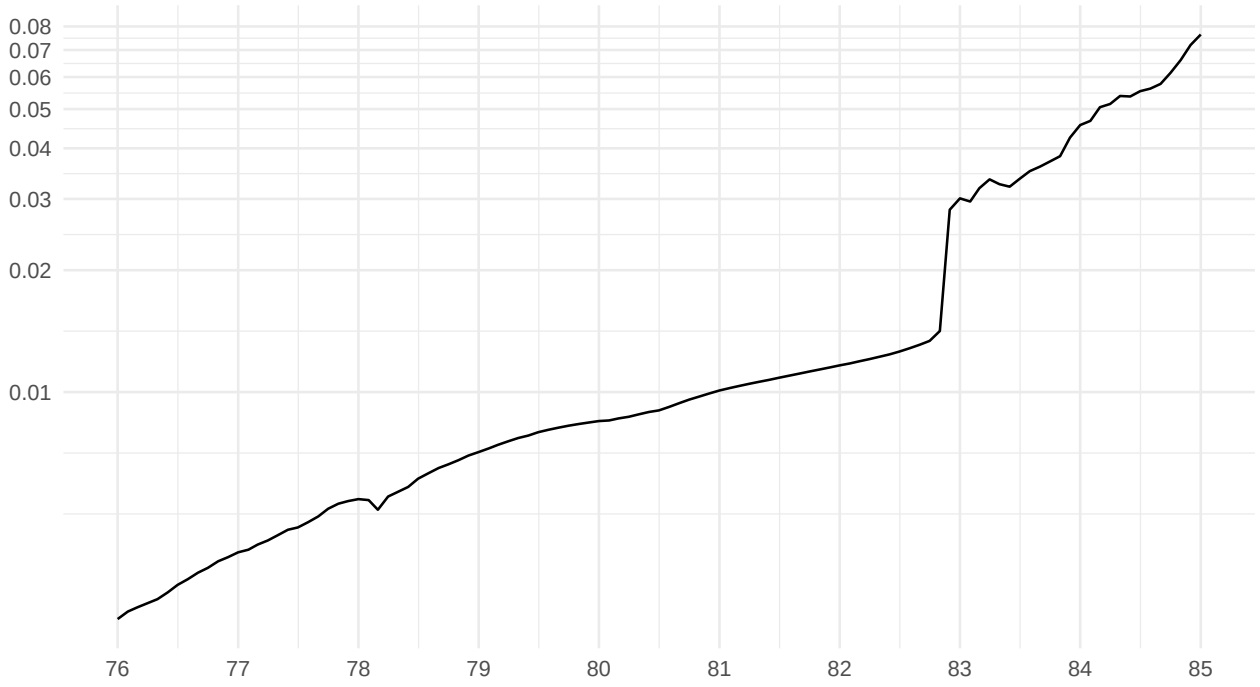

Figure 12: URUGUAY EXCHANGE-RATE (AROUND 1982)

B.4 Mexico 1994

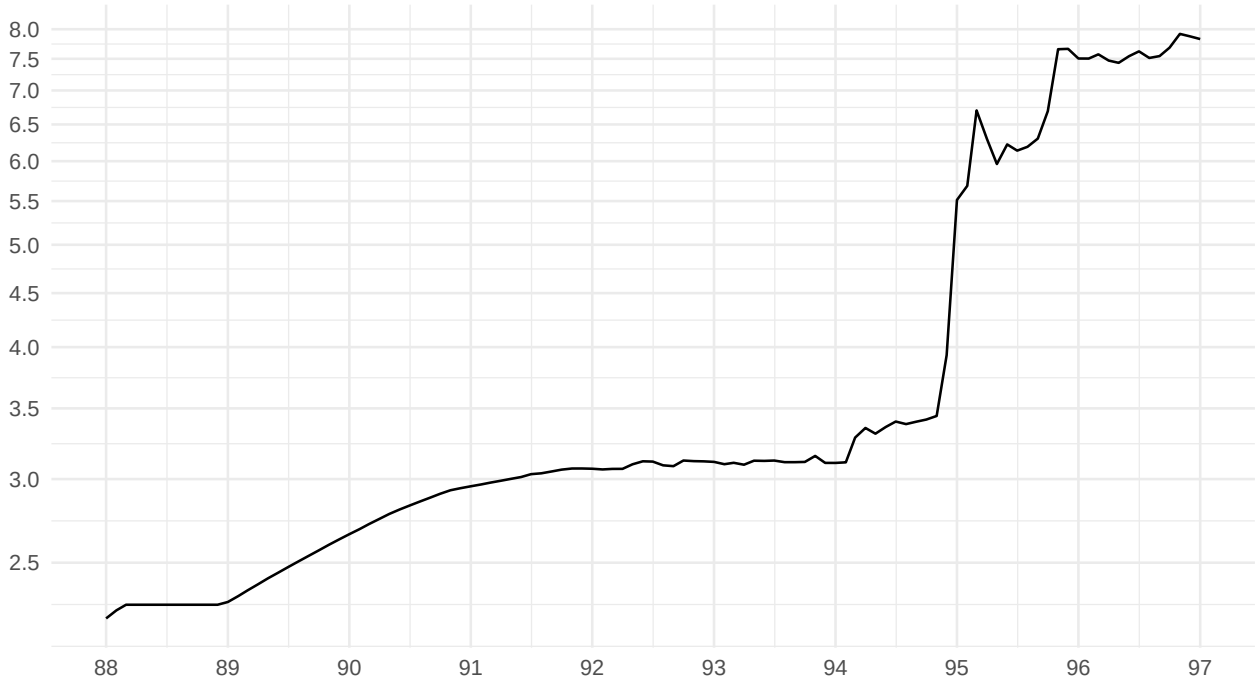

Figure 13: MEXICO EXCHANGE-RATE (AROUND 1994)

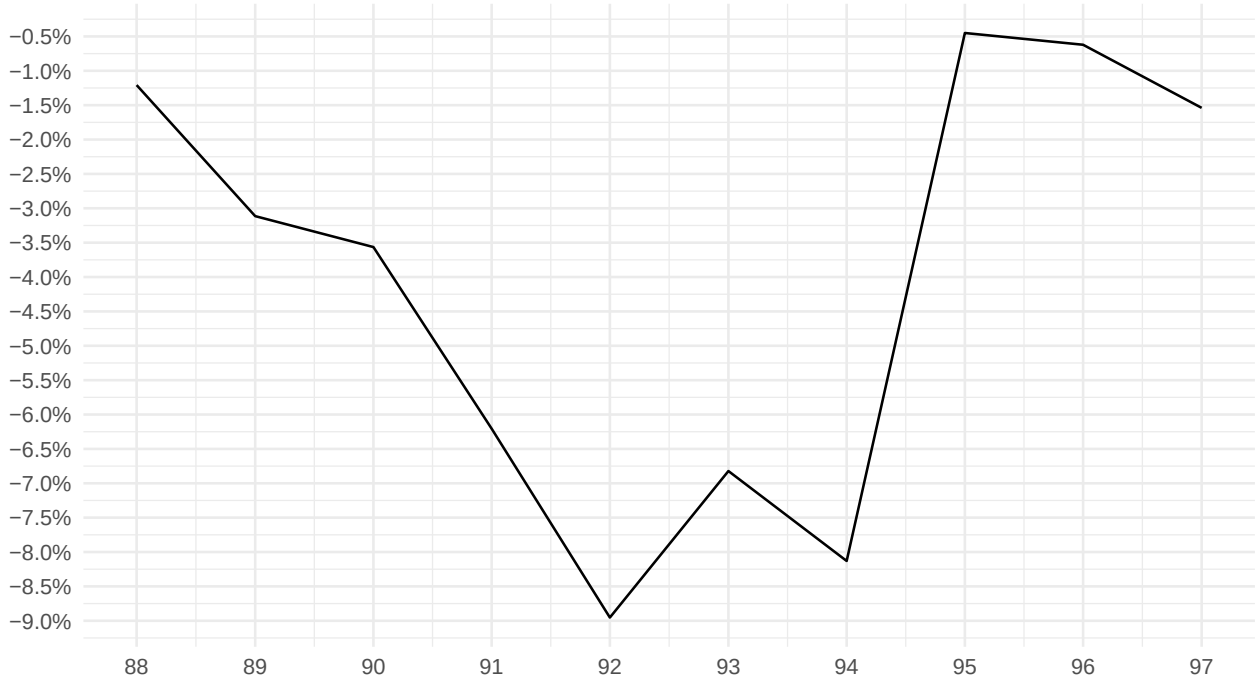

Figure 14: Mexico Current Account (around 1994)

B.5 Indonesia 1997

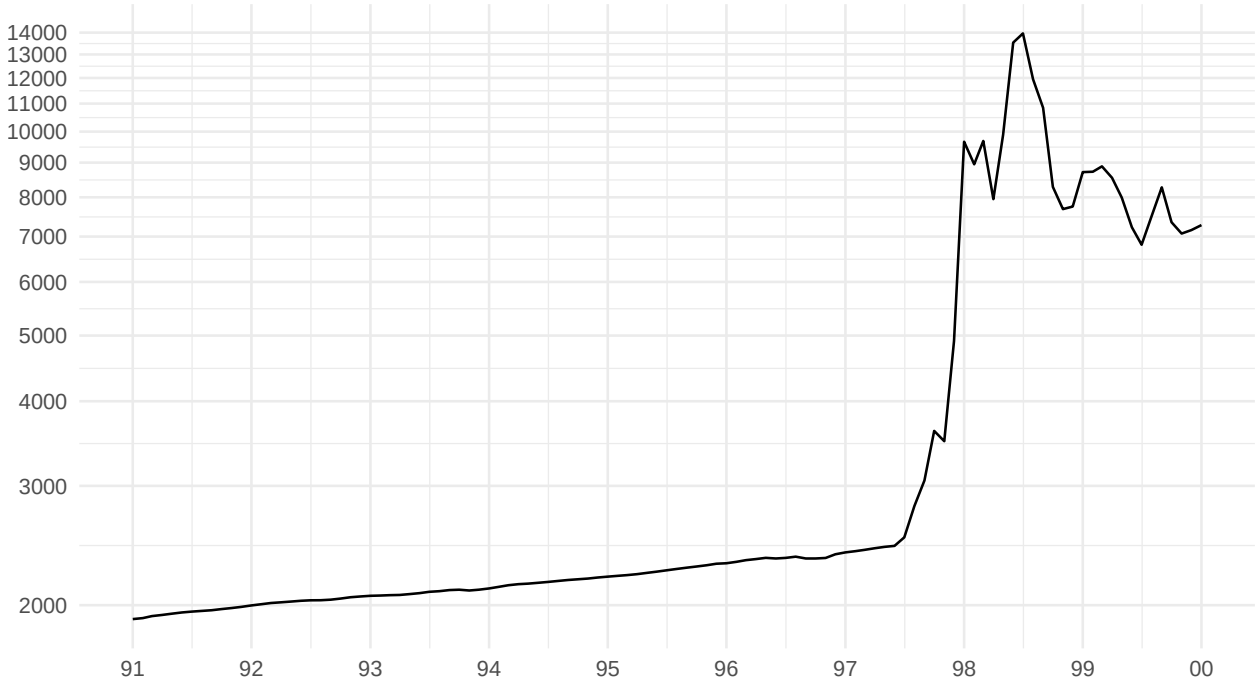

Figure 15: Indonesia Exchange-Rate (around 1997)

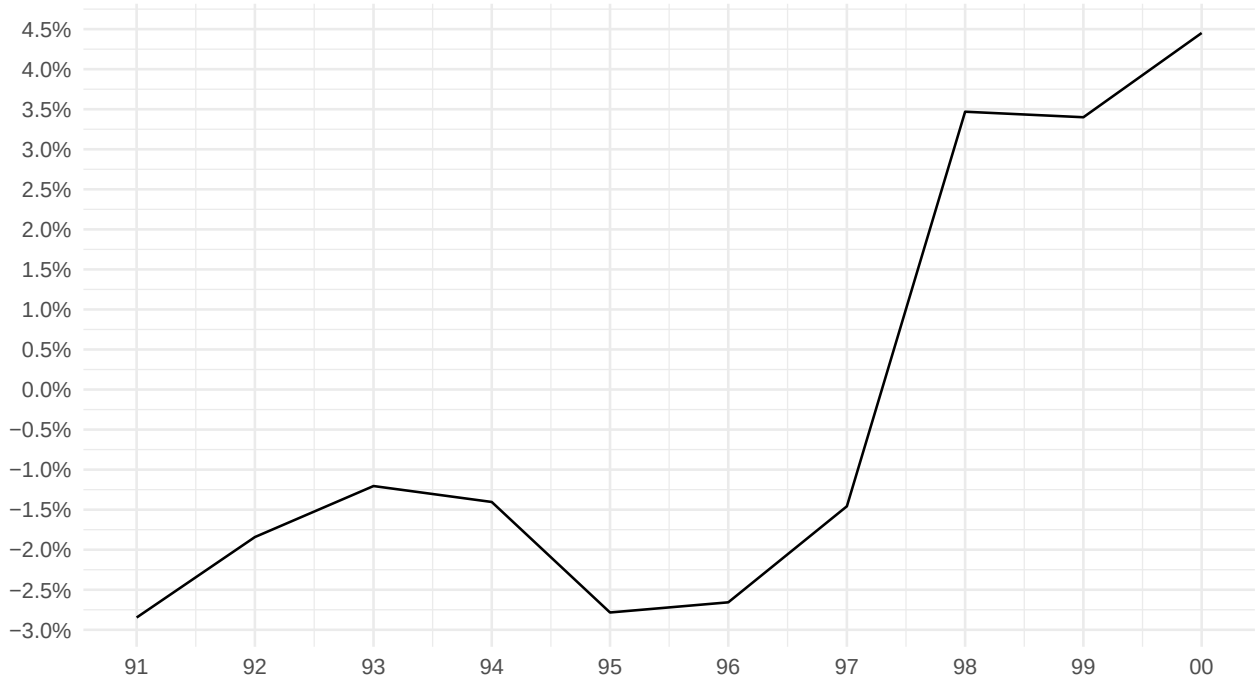

Figure 16: Indonesia Current Account (around 1997)

B.6 Korea 1997

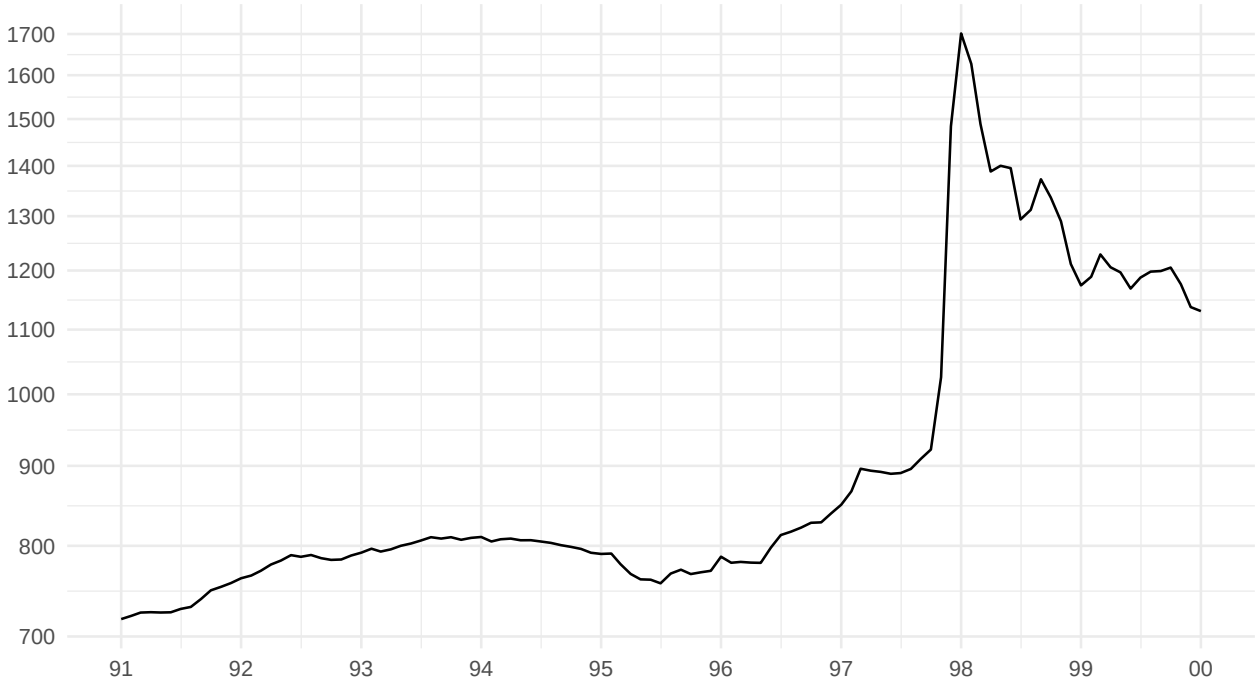

Figure 17: Korea Exchange-Rate (around 1997)

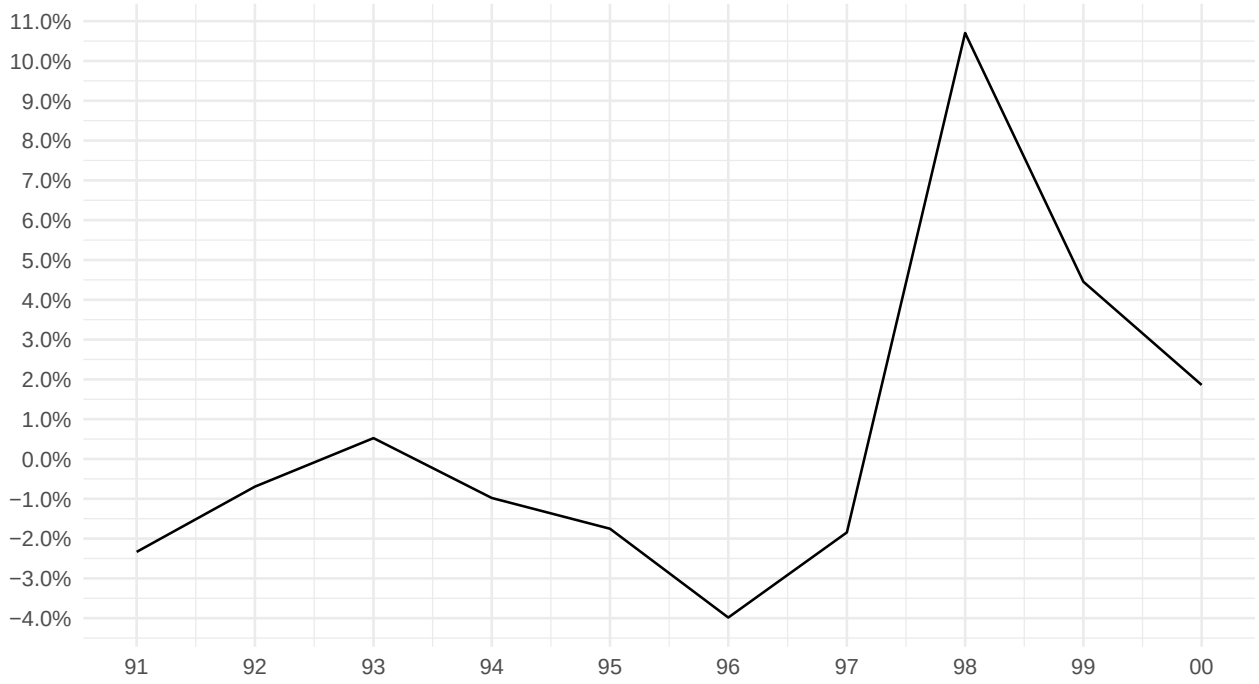

Figure 18: Korea Current Account (around 1997)

B.7 Malaysia 1997

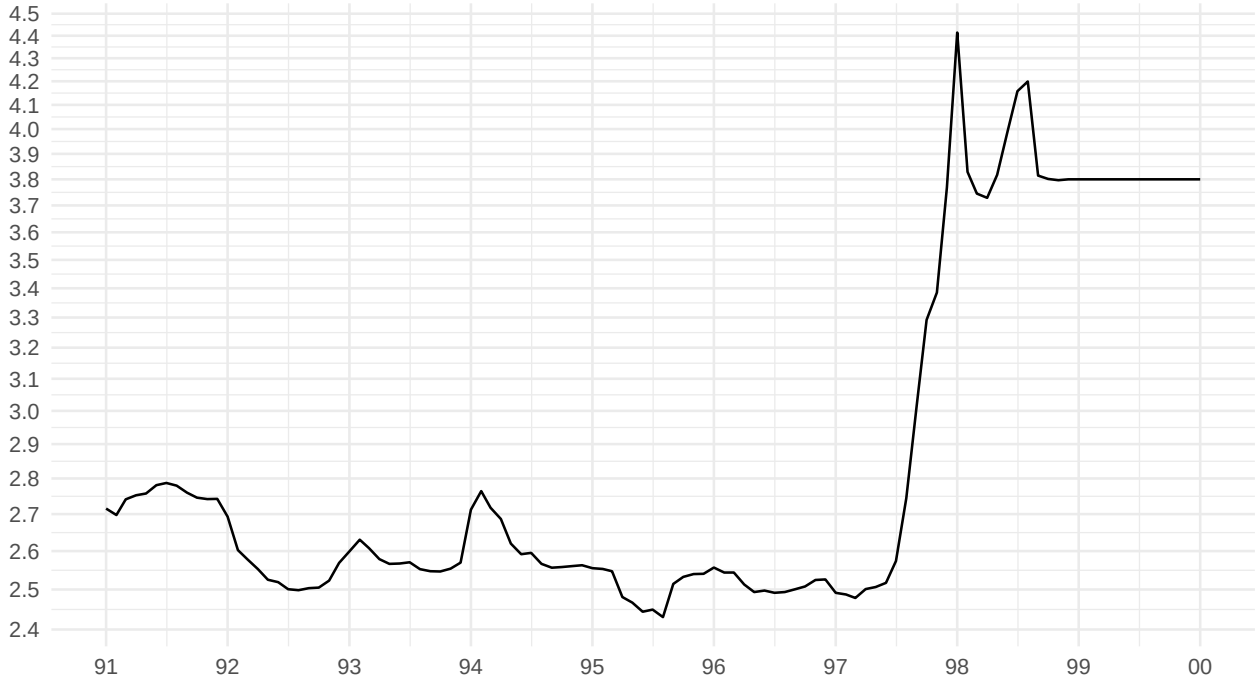

Figure 19: Malaysia Exchange-Rate (around 1997)

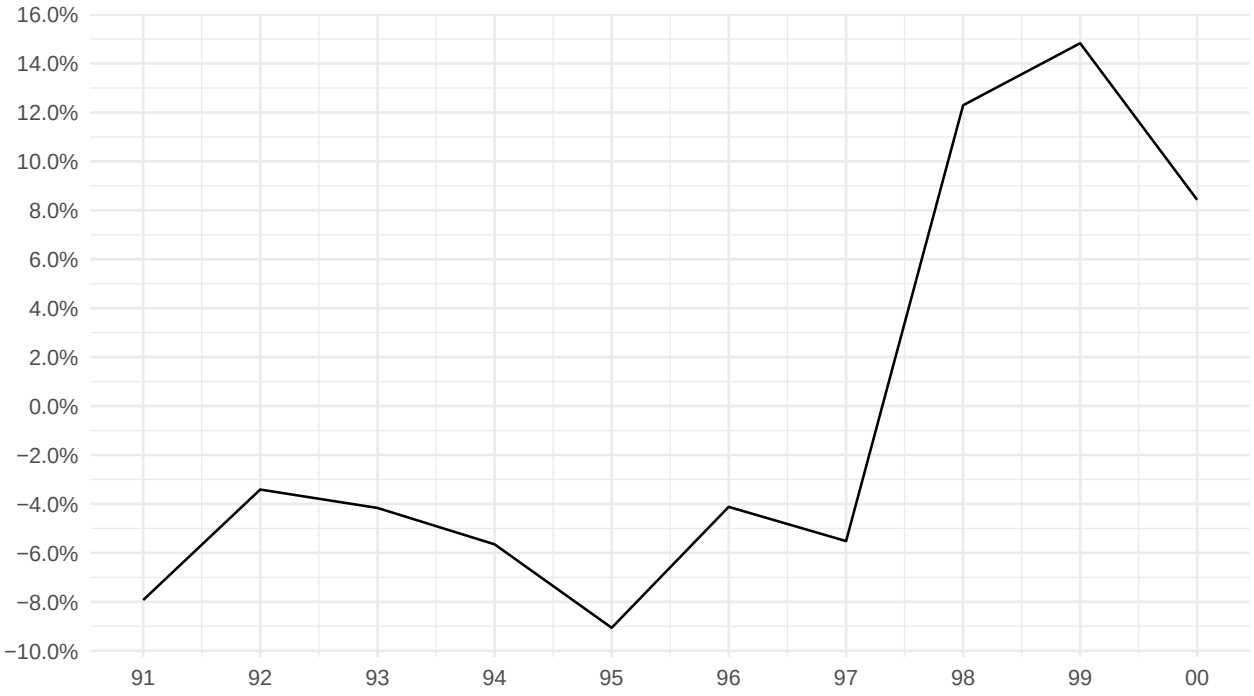

Figure 20: Malaysia Current Account (around 1997)

B.8 Thailand 1997

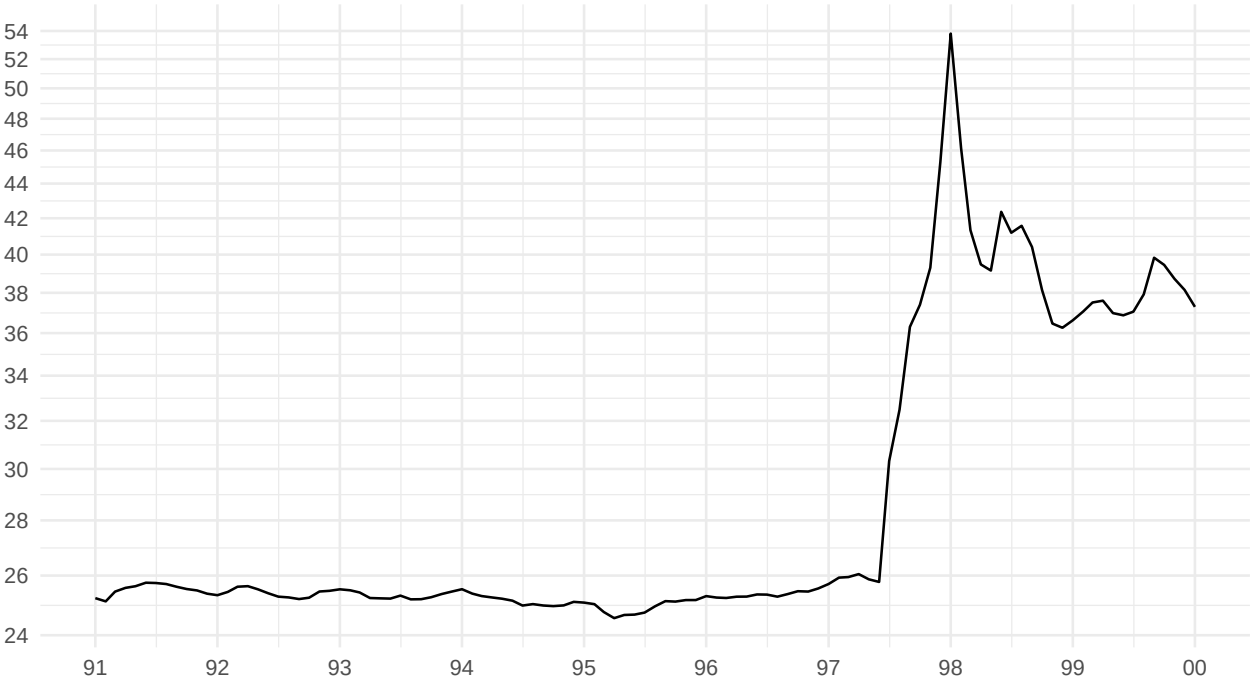

Figure 21: Thailand Exchange-Rate (around 1997)

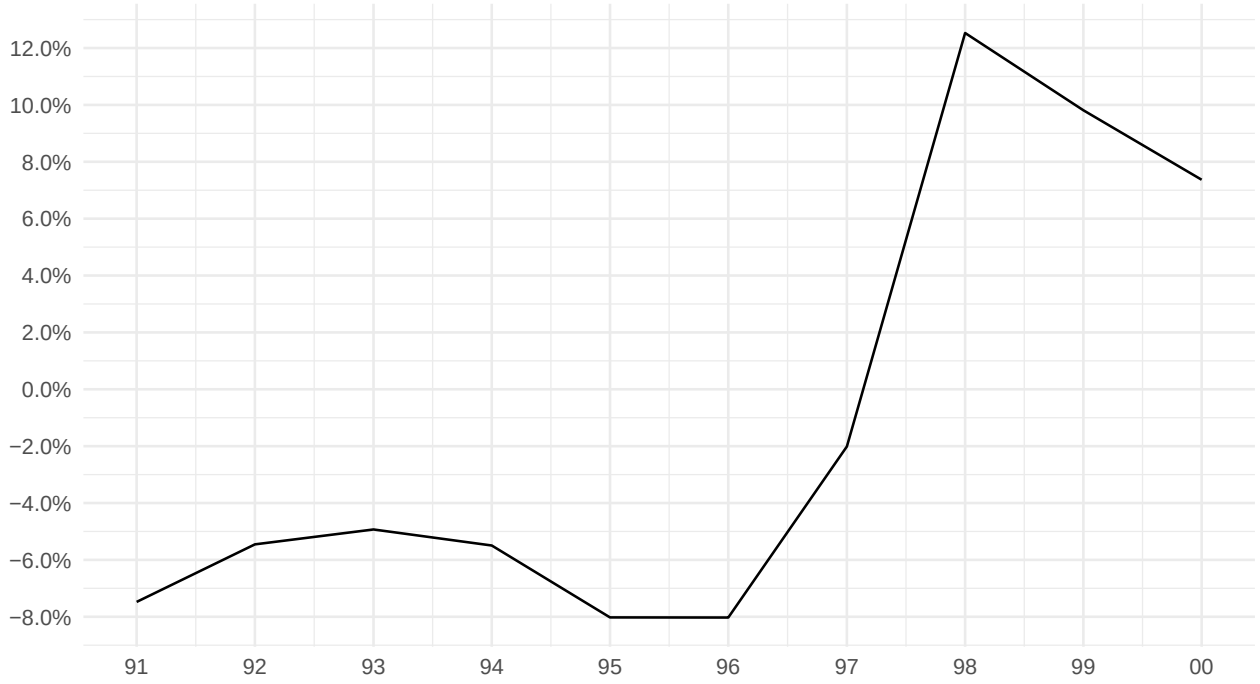

Figure 22: Thailand Current Account (around 1997)

B.9 Turkey 2001

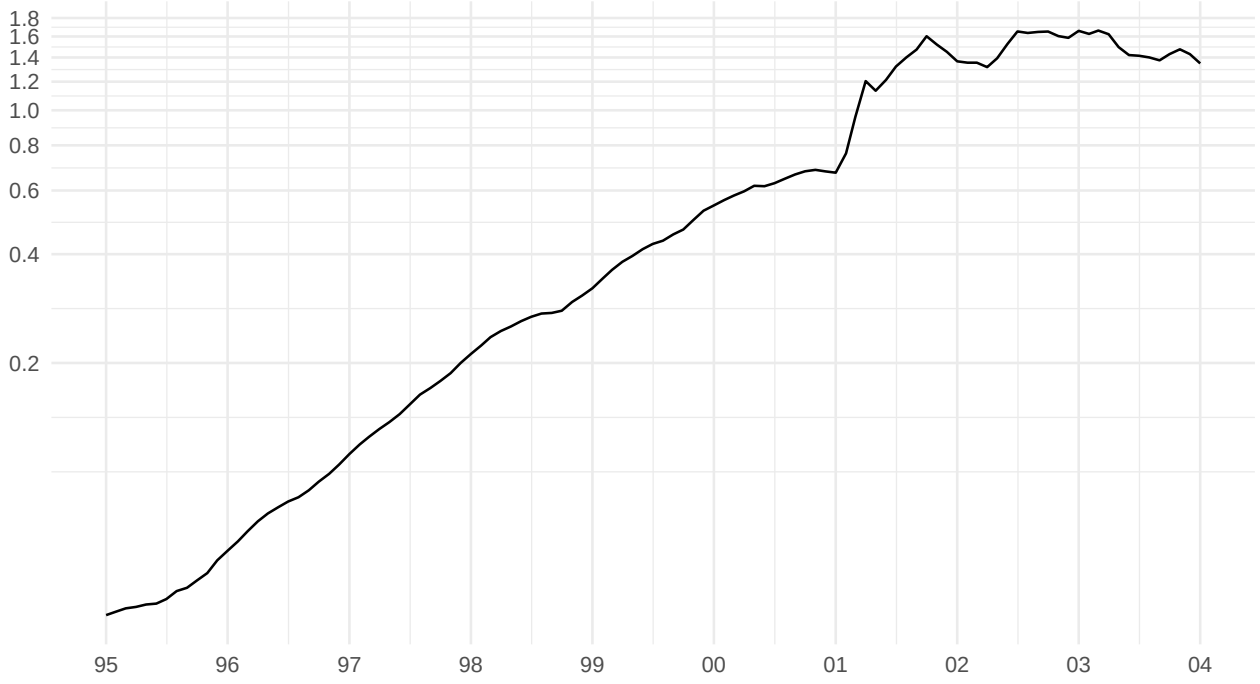

Figure 23: Turkey (2001)

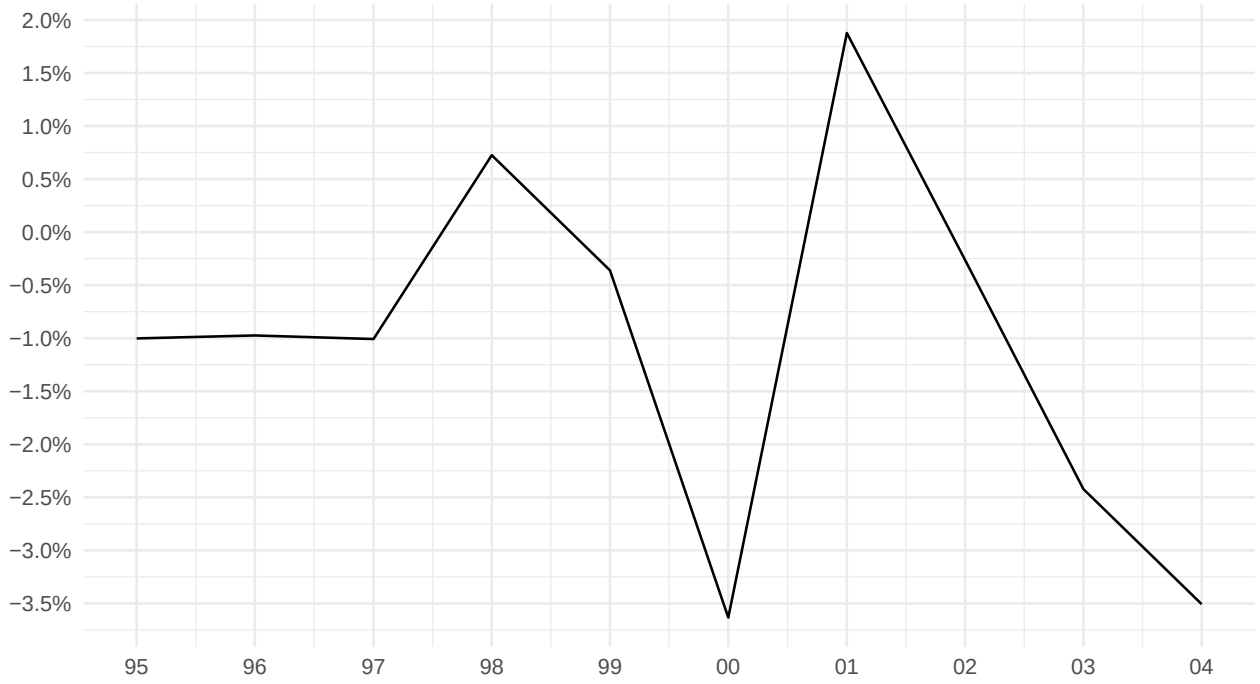

Figure 24: Turkey (2001)

B.10 Argentina 2001

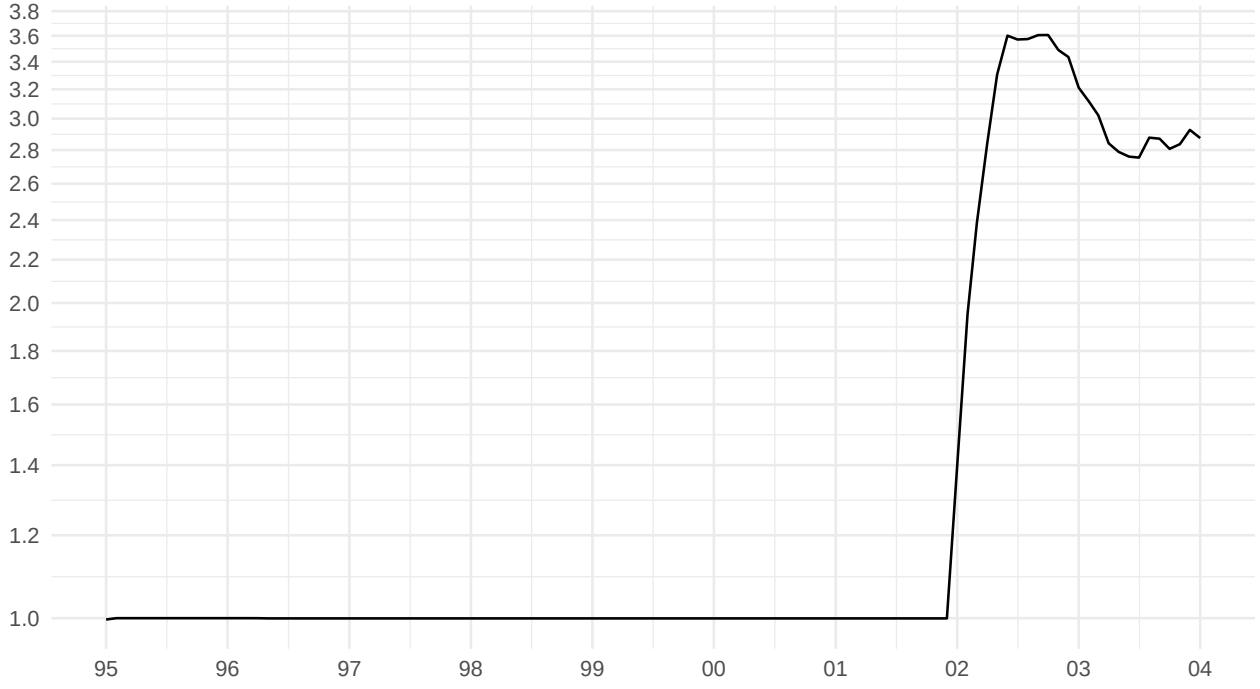

Figure 25: Argentina (2001)

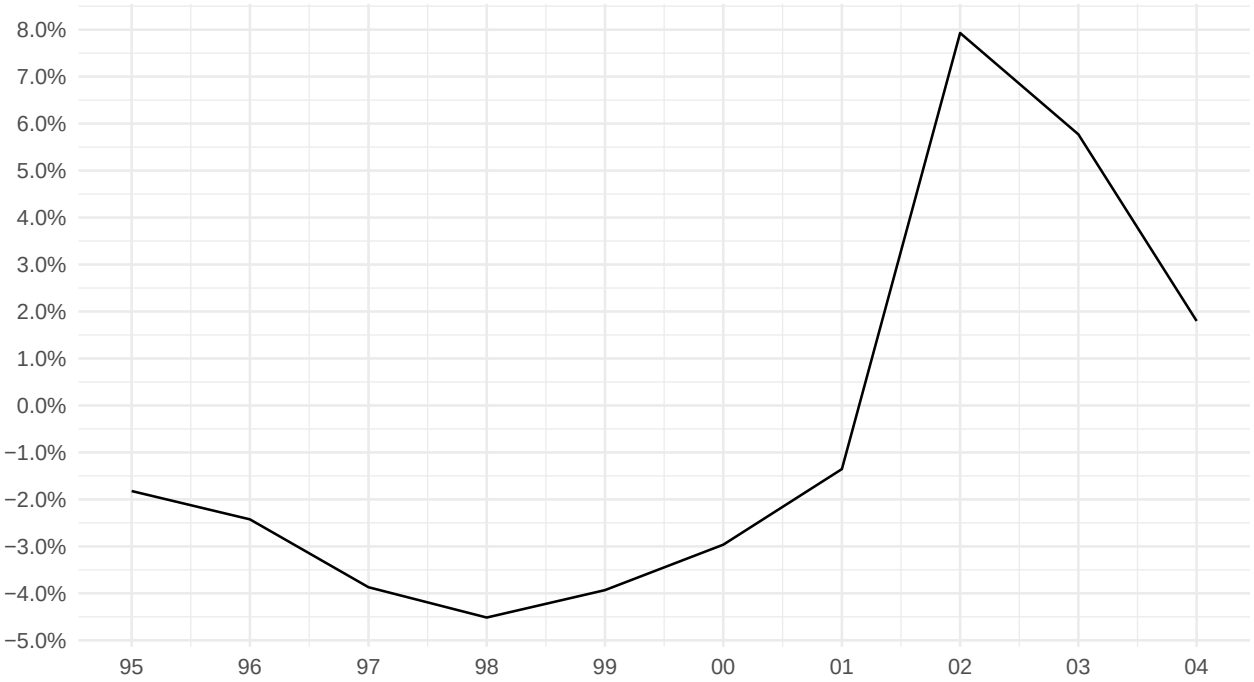

Figure 26: Argentina (2001)

C Aggregate Phillips Curves

C.1 Correlations

C.1.1 Exchange Rate Regimes

Table 8: Coarse Classification of Exchange Rates (Source: Ilzetzki, Reinhart, and Rogoff (2019))

Coarse Class.	Detailed Classification
Fixed / Peg	No separate legal tender
Fixed / Peg	Pre announced peg or currency board arrangement
Fixed / Peg	Pre announced horizontal band that is narrower than or equal to +/-2%
Fixed / Peg	De facto peg
Crawling Peg	Pre announced crawling peg
Crawling Peg	Pre announced crawling band that is narrower than or equal to +/-2%
Crawling Peg	De factor crawling peg
Crawling Peg	De facto crawling band that is narrower than or equal to +/-2%
Crawling Band	Pre announced crawling band that is wider than or equal to +/-2%
Crawling Band	De facto crawling band that is narrower than or equal to +/-5%
Crawling Band	Moving band that is narrower than or equal to +/-2% (
Crawling Band	Managed floating
Floating	Freely floating