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The Macroeconomic Effect of Currency Union Dissolution: Evidence from the Narrative

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The Macroeconomic Effect of Currency Union Dissolution:
Evidence from the Narrative

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In the face of the growing importance of alternative monetary arrangements throughout the world, the economics literature contains contradictory explanations for the impact of currency union dissolution. Some argue that dissolving a union removes limitations to growth, while others contend that the ensuing uncertainty drives weaker macroeconomic performance. In this paper, I present empirical analysis of the macroeconomic effect of dissolving currency unions. I utilize a narrative approach to address asymmetries in the underlying motivations for different dissolutions, and find that the absence of economic concerns driving dissolution leads to improved growth in the post dissolution period. Further, evidence for weaker growth following union dissolution events is driven by concerns of reverse causality. These results indicate that the type of dissolution, as classified by motivation, matters in understanding the potential impact of that dissolution, and that different theoretical explanations prevail depending on the nature of the currency union dissolution.

I. Introduction

The past half-century has seen a rapid increase in the variety of monetary arrangements. From floating currencies to managed floats and from currency boards to dollarization, countries have a broad range of options available in pursuing the optimal management of their currencies. In the face of the growing varieties of alternative monetary arrangements throughout the world, the economics literature contains many competing theories and explanations of how to best take advantage of these options. One of the most important and least understood of these arrangements is the full currency union, with a single currency shared over a supranational region.

While the largest and most prominent of such regions is the European Monetary Zone, similar currency unions have been in place throughout the world throughout the late 20th century. Understanding these unions, in terms of both costs and benefits, remains a contentious area within economics, with dramatically different implications arising from alternative theoretical frameworks. While this debate continues especially around the formation of currency unions, the current literature has left the dissolution of currency unions largely unexplored. To date, there is limited empirical evidence for the costs and benefits for countries that choose (or are forced) to leave a currency union arrangement.

In this paper, I present empirical analysis of the macroeconomic effect of dissolving currency unions. Section II presents an overview of the theoretical literature regarding both the formation and dissolution of currency unions. Section III provides an overview of the data and methodology for the study. Section IV contains preliminary evidence, suggesting that currency union dissolutions have a negative effect on growth. In Section V, however, I present a narrative

approach to address asymmetries in the underlying motivations for different dissolutions and control for issues of reverse causality. This narrative approach provides evidence for weaker growth following union dissolution events is driven by these concerns of reverse causality. Currency union dissolution in and of itself is shown to have a positive effect on growth.

II. Theoretical Literature

The theoretical underpinnings of currency union dissolution rely on literature regarding the formation of currency unions. Robert Mundell (1961) first developed the framework to evaluate the relative value of utilizing one currency across regions, rather than defining the currency area along national boundaries. His main argument concerns the role of monetary policy in a flexible exchange rate environment. He posits that accommodative monetary policy only works for regions that experience symmetrical business cycles, and that not all parts within a country necessarily experience these similar cycles. When this is the case, the policy makers must act sub optimally for some regions if they are to act at all. This can cause even further regional disparities, setting off a vicious cycle of ineffective monetary policy. In this way, he frames the argument for an "Optimal Currency Area," and sets the basis for the theoretical discussion on currency union dissolution.

There are many updates to the theory of Optimum Currency Areas since the original formulation, though a selected group of those developments hold particular relevance in evaluating currency union dissolutions. Understanding of the benefits (of formation) have been updated to include the removal of exchange rate risk in both goods and financial markets, increasing the market access for firms in the area and allowing for increased international risk

sharing (Mundell 1970). For countries with chronic problems relating to inflation, adopting the currency of a country or region with a more credible central bank allows for the importation of credibility in both expected and realized inflation.

The Optimum Currency Area Theory predicts that creating a currency union, under the described conditions, can improve the economic performance for the countries involved. Frankel and Rose (1998) argue that the mere act of creating a common currency area increases that area's suitability for sharing a common currency.[1] Inflationary problems can be curtailed, increased market size allows firms to expand and increase efficiency, and reductions in price uncertainty improve trade conditions. However, the theory acknowledges trouble areas for such arrangements, found in the inherent lack of independent monetary policy. These relative costs and benefits of forming a union inform the relative costs and benefits of union dissolution.

When forming a union, countries hope to realize a positive trade effect by eliminating exchange rate uncertainty, reducing price uncertainty, and increasing the effective size of the market, at the cost of forfeiting independent monetary policy. In dissolution, the opposite should occur, as price and exchange rate uncertainty reduce the quantity of net exports in exchange for regaining independence in monetary policy. Glick and Reuven (2002) have demonstrated the trade effect empirically, finding a 50% reduction in bilateral trade as a result of suspended monetary arrangements.

The benefits of dissolution, however, have not been investigated in the current literature. Nitsch (2004) has demonstrated that countries tend to experience idiosyncratic divergence in inflation in the years preceding a currency union dissolution. It does not look at the profile of

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[1] Known as the endogeneity of the common currency argument, this was one of many justifications discussed at the time of the implementation of the Euro.

inflation in the years following the dissolution – one area to consider as a cost of dissolution. The most direct theoretical effect should be on the exchange rate, as a currency union is in effect an exchange rate arrangement. There are also the indirect effects on the exchange rate. One tool that countries forfeit in the adoption of a common currency is that of competitive devaluation. This was first suggested by Mundell (1961), characterized as the automatic stabilization effect of floating exchange rates, and indicates that countries abandoning a currency union should experience devaluations that can accommodate disparities in inflation, productivity, and other asymmetries between economies.

III. Data and Methodology

With the data collected by Glick and Reuven (2002) as a starting point, I identify 74 discrete events of currency union dissolution. Each event is defined on the country level, rather than the aggregate union level. Only those events in which a country leaves the union and those events in which an entire union dissolves are included in the sample. This excludes observations from countries that stayed in a union after another member or members left, ensuring that only countries that directly experience dissolution are included in the sample.

The growth rate of GDP is the main variable of interest in studying the macroeconomic effects of currency union dissolution. The other indicators I consider include changes in trade flows, inflation, and the exchange rate. As it may take a number of years to realize either costs or benefits in any of these situations, I exploit five years of data prior to each event and ten years of data after each event. GDP growth rate on an annual basis was collected from the World Development Indicators Database, provided by the World Bank. Net exports are calculated for

each country using the difference between Exports and Imports (also from the Word Bank) normalized to 100 for the year of dissolution. Net exports are allowed to take on either a positive or negative sign, with a positive sign reflecting a trade surplus and a negative sign reflecting a trade deficit. Inflation is measured using the consumer price index, provided by the World Bank. The Official Exchange Rate, obtained from the Penn Tables, is based on local currency unit per United States Dollar[2] converted to a growth rate, to understand the profile of exchange rate evolution. This allows for a common benchmark to compare across events, countries, and currencies.

The main variable providing guidance as to whether the hypothesized benefits or costs dominate in each situation is the growth rate of GDP. Although the literature provides some evidence as to the trade effect, I expand upon previous work by considering all of the net exports for each country rather than only the bilateral trade effect as in Glick and Reuven (2002). This captures not only the direct trade effect, in terms of changes between the former union members, but also captures broader effects of the dissolution on trade patterns with non-union countries. Inflation is considered for two theoretical perspectives. Since one motivation in joining a currency union is the importation of inflationary credibility, the dissolution of currency unions should result in the forfeiture of that credibility and an observed increase in inflation. Alternatively, expansionary tendencies after regaining independent monetary policy may lead to some inflationary preferences.

As a preliminary investigation of these effects, I utilize a difference in means test, comparing the mean of the five years prior to dissolution with that of the ten years following

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[2] Countries with a USD or USD peg currency are excluded

dissolution. The following section contains the evidence from these tests, as well as visual profiles to better understand the evolution of each variable over time. A regression framework is also presented to ensure for robustness in the results. Section V contains the results of a narrative approach, with a difference in means test, profiles of variable evolution, and a regression framework to validate further results.

IV. Preliminary Evidence on the Effect of Currency Union Dissolution

A. Difference in Means Tests
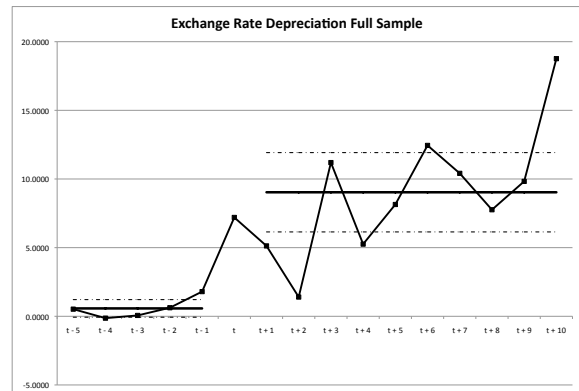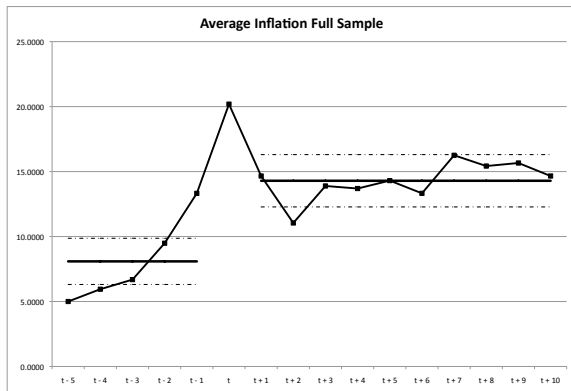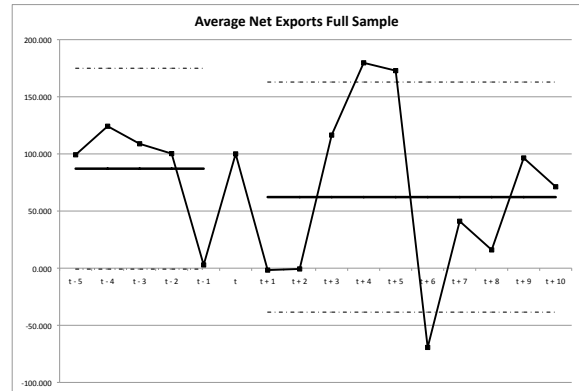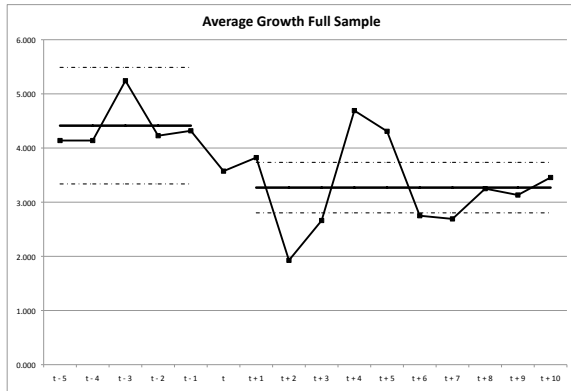
Summary of Preliminary Evidence

Sample Group	Growth	Net Exports	Inflation	Exchange Rate
All Dissolution	-1.093** (0.0166)	-24.274 (0.3809)	6.157*** (0.0001)	8.454*** (0.0000)
Observations	1011	431	654	1012
Events	68	29	47	68
p-value less than		.10*	.05**	.01***

For the entire sample group, there is a negative and statistically significant effect of currency union dissolutions on the growth rate. Importantly, the effect is also economically significant, with growth slowing by an average of over 1% per annum in the post dissolution period.

However, the evidence from net exports does not attribute this reduction to changes in trade patterns. Net exports fall slightly in the post dissolution period, although that difference in means is not significantly different from zero. This poses a question, especially in light of exchange rate evidence consistent with theory. Countries do experience currency devaluation, but that devaluation does not seem to lead to improvements in trade. That seems to contradict the competitive devaluation theory. Despite currency devaluation, exports fail to become increasingly competitive in the global market, driving growth through the external account. An alternative explanation could be that dissolution acts as a confirmation of weak performance and an indicator of continued problems, causing foreign investors to withdraw funds and reduce demand for the currency. This question is addressed in the next section.

Inflation accelerates significantly, consistent with theory from a few different angles. For countries that exit a currency union in an effort to accelerate growth or slow down a recession, expansionary monetary policy should follow, driving up prices in the process. For countries that

adopt a currency union out of a concern for inflation credibility, the disruption of that credibility leads to a similar result.

B. Regression Analysis

To check for robustness in the results, I introduce a panel regression model to control for fixed effects in each event. This captures unique variations between each event, as for an example, Ireland in 1979 is a very different event than Kenya in 1967. A dummy for whether or not the currency union is dissolved is then regressed on each of the four variables of interest. This dummy takes on the value zero for the five years leading up to each event of dissolution, and then takes on a value of one for the ten years following dissolution, implying that each event includes fifteen years worth of data. The results are presented in Table 1.

Table 1. Full Sample

	(1) Growth Rate	(2) Net Exports	(3) Inflation	(4) Exchange Rate
	-1.097 [-1.196]	-24.326 [-0.167]	4.608*** [5.509]	8.660*** [3.548]
Observations	1,011	431	654	1012
R-squared	0.006	0.000	0.020	0.019
Number of Events	68	29	47	68

Robust t-statistics in brackets
*** p<0.01, ** p<0.05, *
p<0.1

Controlling for these event fixed effects, the growth effect of currency union dissolution is less significant than in the simple difference of means test. It does still remain negative, indicating that dissolution is associated with growth slowing by 1.097%, but is not statistically significant at the 10% level. Both the rate of change of the exchange rate and the rate of inflation remain highly statistically significant, at the 1% level. As expected, there is no change in the

results for net exports. From this initial result, it remains clear that further tests are necessary to untangle the impact of currency union dissolution.

V. Results from the Narrative Approach

A. Theory

Within the group of countries that have undergone currency union dissolutions, there are many different motivations that lead to that eventual action. Adapting the narrative approach of Papaioannou and Siourounis (2008), who used the technique for studying the effect of democratization on growth, I consider how these varying motivations cause different responses in the variables of interest from event to event.

There are two main categories of motivation to dissolve a currency union. To illustrate, consider a situation in which a number of countries adopt a common currency in the hopes of reducing price uncertainty between the countries. For a few years, the exchange rate certainty leads to improvements in trade flows, and the union realizes the projected benefits of the arrangement. However, political tensions between the countries mount, and eventually reach the point at which the countries no longer desire such close association with their union partners. In this case, the union achieved the intended and desired outcome of improved economic performance for the member countries. However, due to political pressures, the member countries choose to dissolve the currency union.

Another typical case of politically motivated dissolution events occurs when a former colony gains independence. As part of this process, the country gains control of political processes, but for a time maintains old ties with regards to currency and trade relationships. As

the country gains more stability and independence, it eventually makes the decision to establish and independent currency. In these cases, the catalyst is not poor performance, but rather a desire to achieve total independence from the former colonist.

Not all dissolutions, however, are free from economic concerns. A more common situation arises when the introduction of a common currency fails to deliver the intended or hoped for improvements in trade flows, and uncertainty remains high. Tension between the member countries mounts, but is driven by economic factors. Producers in one country realize gains in productivity while producers in another union country fall behind. Inflation rates and preferences diverge between member countries. Without independent currencies and monetary policies, the productivity gap drives disparity in economic performance that can't be cushioned with competitive devaluation. The union eventually dissolves, either in part or in full, as the weaker countries seek to take control of their own monetary policy or the stronger countries seek to free themselves of the burden of a weaker neighbor.

In each case, a currency union dissolves. However, the first cases are driven by political factors, while the latter has more readily identifiable economic motivations. Especially given the well-documented path dependence of growth, such disparities between the causes of dissolution are a critical identifier in understanding their nature and implications. To investigate this further, I divide the sample into politically motivated and economically motivated dissolutions.[3]

The comparison between the different types of dissolutions relies on a strict interpretation of which events can be called economically motivated and which can be called politically motivated. While many cases are rather clear-cut, there are a number of events in which the

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[3] For a full list events with their classification, see Appendix A

motivations are a mixture of both political and economic drivers. In these cases, the events are classified in the economic group. This strategy is valuable in addressing concerns of endogeneity. In economically motivated dissolutions, there is a strong case that while union dissolution may cause poor macroeconomic performance, it could be that poor economic in the post dissolution period is the result of the very weakness that caused the dissolution in the first place. When this does occur, the growth effects of the dissolution are severely confounded, and the direction of causality is very difficult to ascertain. There is no way to test "what would have happened if the country didn't undergo a dissolution event?" However, politically motivated events do not share this concern. These events occur regardless of the pre dissolution growth performance, and allow for a direct analysis of the isolated effect of the dissolution, rather than the effect of various indicators on the likelihood of dissolution.

B. Difference in Means Tests

Average Growth Political Dissolutions
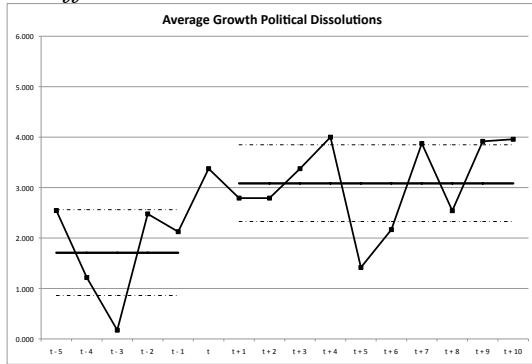
355 observations from 24 events

Average Growth Economic Dissolutions
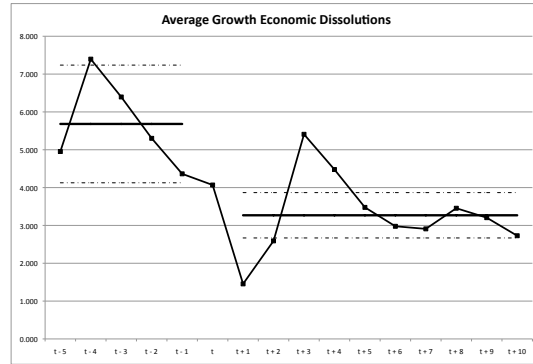
656 observations from 44 events

Average Net Exports Political Dissolutions
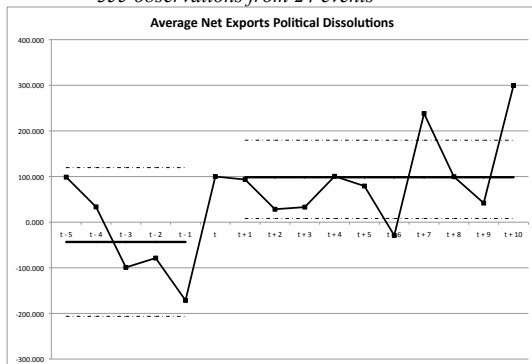
131 observations from 9 events

Average Net Exports Economic Dissolutions
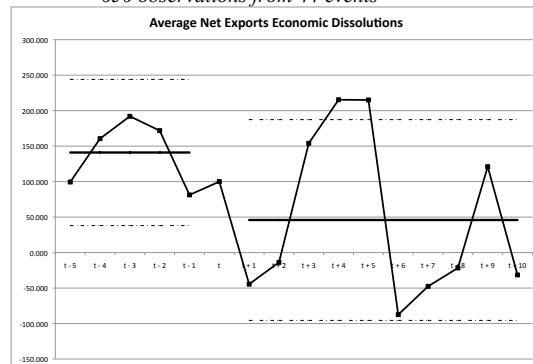
300 observations from 20 events

Average Inflation Political Dissolutions
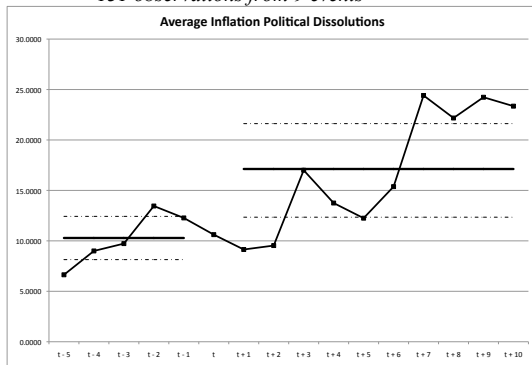
216 observations from 17 events

Average Inflation Economic Dissolutions
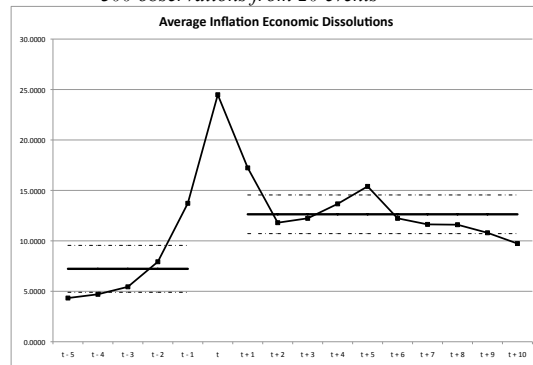
438 observations from 30 events

Exchange Rate Depreciation Political Dissolutions
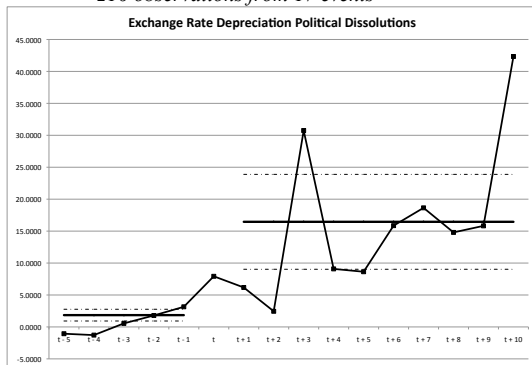
375 observations from 25 events

Exchange Rate Depreciation Economic Dissolutions
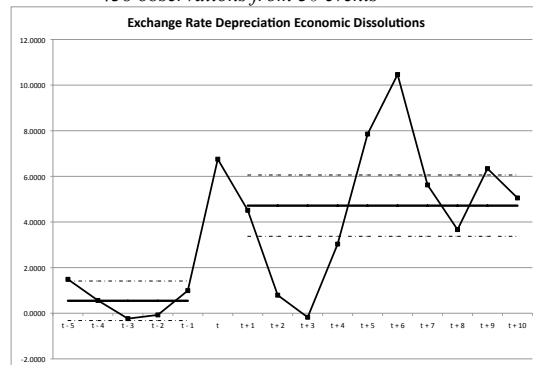
637 observations from 43 events

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Summary Evidence from the Narrative Approach				
Sample Group	Growth	Net Exports	Inflation	Exchange Rate
All Dissolutions	(-) **	(+)	(+) ***	(+) ***
Economic	(-) ***	(-)	(+) ***	(+) ***
Political	(+) **	(+) **	(+) **	(+) ***
p-value less than		.10*	.05**	.01***

Summary Evidence from the Narrative Approach				
Sample Group	Growth	Net Exports	Inflation	Exchange Rate
All Dissolutions	-1.093** (0.0166)	-24.274 (0.3809)	6.157*** (0.0001)	8.454*** (0.0000)
Economic	-2.407*** (0.0003)	-95.122 (0.1910)	5.307*** (0.0007)	4.171*** (0.0000)
Political	1.379** (0.0134)	144.989** (0.0417)	7.21** (0.0358)	15.825*** (0.0017)

In both economically motivated and politically motivated cases, exchange rate depreciation and increases in inflation occur as predicted in theory. Regaining independent monetary policy puts the tools necessary for the expansion of liquidity and competitive devaluation back into the hands of central banks. The natural consequence that results is acceleration in both inflation and depreciation.

The important asymmetry occurs in the growth rate of GDP and evolution of trade. In politically motivated dissolutions, the events lead to faster growth, at an average of 1.379% higher in the years of the post dissolution period compared to the years leading up to the event. More strikingly, average trade accelerates by just under 145 (on an index normalized to 100 for year of dissolution). Given data limitations, with a limited number of observations, this evidence should not be considered conclusive. It does, however, offer compelling reason to believe that one likely and important benefit of exogenous currency union dissolution lays in exchange rate devaluation that results in improved competitiveness in global markets. This, in turn, is one important factor in faster growth for countries that undergo currency union dissolution. In the absence of economic drivers for dissolution, currency union dissolution benefits outweigh the costs discussed in previous literature.

While not applicable for the direct study of dissolutions, economically driven dissolutions nonetheless offer some interesting insights, along with explaining much of the results found in the preliminary full sample tests. These events, occurring as the result of poor macroeconomic performance, are not enough to bring growth to a higher level than prior to the event. The results from the political events suggest that things would have been worse in the absence of the dissolution. Poor performance may also have put those countries on a lower path of growth and development, and the event of dissolution is either a consequence thereof or fails to change this fact. The event could also send a signal that things really are very bad, and that the worst is yet to come. Regardless, net exports fall (although not statistically different from zero), despite the exchange rate depreciation. Inflation also ticks up as a prelude to continued weakness moving forward.

C. Regression Analysis

As in the case for the sample on the whole, I estimate a panel regression to examine the robustness of the results in the difference of means testing. In this regression, I again control for fixed effects within each event, and use the dummy for dissolved events as the explanatory variable for each of the dependent variables of interest. As in the full sample group, the five years prior to the event are defined by a zero value on the dissolved dummy, and the ten years after the dissolution are defined by a value of one for the ten years following dissolution, for a fifteen-year period in each event. The sample is now split between the political group and the economic group, according to the classification developed from the narrative approach.

Table 2. Narrative Evidence

	(1) Growth Rate	(2) Net Exports	(3) Inflation	(4) Exchange Rate
Economic Events				
	-2.434*	-95.123	5.439***	4.343***
	[-1.807]	[-0.481]	[6.467]	[3.559]
Observations	656	300	438	637
Number of Events	44	20	30	43
Political Events				
	1.403***	146.831	2.509	15.825**
	[2.836]	[1.017]	[1.278]	[2.645]
Observations	355	131	216	375
Number of Events	24	9	17	25

Robust t-statistics in brackets
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The results largely confirm those found in the difference of means testing. Economic events still have a negative impact on growth, statistically significant at the 10% level, with increasing inflation and a depreciating exchange rate. Political events still exhibit a positive growth effect, with greater statistical significance than in the preliminary results. There is some loss of significance in the other variables of interest, but the story remains the same. Politically motivated events, free from the endogeneity concerns of other currency unions dissolution, demonstrate that dissolution unrelated to poor economic performance has a positive effect on growth, and the costs outweigh the benefits of such an event.

VI. Conclusion

Despite many competing arguments both for and against the establishment of currency unions, there has been limited discussion investigating the costs and benefits associated with the dissolution of currency unions. In the face of growing unrest within major currency unions and ongoing discussions for further currency union formation throughout the world, this paper seeks to shed light on the potential ramifications of dissolving a common currency area. I find that currency union dissolution, in the absence of poor macroeconomic performance leading up to the event, has a positive effect on growth, driven in part by increased external competitiveness, improvements in trade flows, and a more lower exchange rate. In cases with potential reverse causality, where poor macroeconomic performance leads to a currency union dissolution, the act of currency union dissolution does not provide sufficient stimulus to achieve a higher average rate of growth in the post dissolution period.

For policy makers contemplating the formation of a currency union, the potential costs in the event of a union failure must be considered in tandem with the anticipated benefits of joining the union. While the causes determining the successful implementation of currency union dissolutions lies beyond the scope of this preliminary investigation, this is a critical area for further research. The evidence presented in this paper suggests that currency unions have a dark side when they fail, and that policy makers who overlook this feature do so at the risk of sustained negative impacts on growth for a significant period in the post dissolution period. Motivations matter, and currency unions dissolution has the potential to improve macroeconomic performance. However, this benefit becomes much more difficult to realize in the event of poor macroeconomic performance leading to a dissolution.

Appendix A

Summary Of Dissolutions and Motivations

break	Country	Year	Circumstance	Classification
1	Algeria	1969	Independence (from France)	Political
2	Angola	1976	Independence (from Portugal)	Political
3	Bangladesh	1974	Political Independence	Political
4	Barbados	1971	Broke Parity with East Caribbean Dollar	Economic
5	Benin	1975	Realignment of CFA Franc	Economic
6	Bermuda	1972	Broke Parity with United Kingdom	Economic
7	Brunei Darussalam	1971	Formation of Malaysia/Singapore Independence	Political
8	Burkina Faso	1975	Realignment of CFA Franc	Economic
9	Myanmar	1966	Broke Parity with India	Economic
10	Myanmar	1971	Broke Parity with United Kingdom	Economic
11	Cape Verde	1977	Independence (from Portugal)	Political
12	Comoros	1975	Realignment of CFA Franc	Economic
13	Congo, Dem Rep	1961	Independence (from Belgium-Luxembourg)	Political
14	Congo, Rep	1975	Realignment of CFA Franc	Economic
15	Cote d'Ivoire	1975	Realignment of CFA Franc	Economic
16	Cote d'Ivoire	1976	Realignment of CFA Franc	Economic
17	Cyprus	1972	Broke Parity with United Kingdom	Economic
18	Dominican Republic	1985	Broke Parity with United States Dollar	Economic
19	Gabon	1975	Realignment of CFA Franc	Economic
20	Gambia, The	1965	Dissolution of West African Pound	Political
21	Gambia, The	1971	Broke Parity with United Kingdom	Economic
22	Ghana	1965	Dissolution of West African Pound	Political
23	Grenada	1976	Broke Parity with East Caribbean Dollar	Economic
24	Guatemala	1986	Broke Parity with United States Dollar	Economic
25	Guinea-Bissau	1977	Independence (from Portugal)	Political
26	India	1966	Rupee Devaluation (break from Gulf countries)	Economic
27	Ireland	1979	Introduction of EMS	Economic
28	Jamaica	1969	Decimalization	Economic
29	Kenya	1967	Dissolution of East African Shilling	Political
30	Kenya	1978	Political Instability In Tanzania and Uganda	Political
31	Kuwait	1961	Kuwaiti Dinar	Economic
32	Libya	1967	Independence (from British Protectorate)	Political
33	Madagascar	1975	Realignment of CFA Franc	Economic
34	Malawi	1964	Broke Parity with United Kingdom	Political
35	Malawi	1971	Introduction of Malawian Kwacha	Economic
36	Malaysia	1971	Broke Parity with United Kingdom	Political
37	Maldives	1971	Broke Parity with United Kingdom	Economic
38	Malta	1971	Independent Currency/Sterling Float	Economic
39	Mauritius	1966	Broke Parity with India	Economic
40	Mauritius	1976	Split with Seychelles	Political
41	Morocco	1959	Independence (from France)	Political

42	Mozambique	1977	Independence (from Portugal)	Political
43	Netherlands Antilles	1994	Inflationary pressures	Economic
44	New Zealand	1975	Broke arrangement with Samoa	Political
45	Nigeria	1965	Dissolution of West African Pound	Economic
46	Nigeria	1973	Broke Parity with United Kingdom	Economic
47	Oman	1970	Replacement of Indian Rupee with Gulf Rupee	Economic
48	Oman	1971	End of Gulf Rupee	Economic
49	Pakistan	1966	Broke Parity with India	Economic
50	Portugal	1976	Independence of Overseas Territories	Political
51	Qatar	1966	Did Not Follow When Indian Rupee Devalued	Economic
52	Reunion	1975	Realignment of CFA Franc	Political
53	Rwanda	1966	Independence (from Belgium-Luxembourg)	Political
54	Samoa	1975	Independence (from New Zealand)	Political
55	Sao Tome & Principe	1977	Independence (from Portugal)	Political
56	Senegal	1975	Realignment of CFA Franc	Economic
57	Seychelles	1976	Break from using Mauritian Rupee	Economic
58	Sierra Leone	1965	Dissolution of West African Pound	Political
59	Singapore	1971	Independence (from United Kingdom)	Economic
60	Solomon Islands	1979	Independence (from United Kingdom)	Political
61	Somalia	1967	Dissolution of East African Shilling	Economic
62	Sri Lanka	1966	Broke Parity with India	Economic
63	St Pierre & Miquelon	1976	Realignment of CFA Franc	Economic
64	Suriname	1994	Inflationary pressures	Economic
65	Tanzania	1966	Dissolution of East African Shilling	Economic
66	Tanzania	1978	War	Political
67	Togo	1976	Realignment of CFA Franc	Economic
68	Tonga	1991	Broke Parity with Australia	Economic
69	Trinidad and Tobago	1976	Broke Parity with East Caribbean Dollar	Economic
70	Tunisia	1958	Broke Parity with France	Political
71	Uganda	1966	Dissolution of East African Shilling	Economic
72	Uganda	1978	War	Political
73	United Kingdom	1972	Ended overseas regulation/Pound Sterling Float	Economic
74	Yemen, Rep	1972	End of Gulf Rupee	Economic

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