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Political Volatility and Capital Markets: Evidence from Transition

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Abstract

This paper looks at the effects of political volatility in transition economies to ascertain how nascent political institutions affect fledgling capital markets. Asymmetric (GJR) GARCH modeling of monthly data was taken for 21 transition economies on financial volatility, political volatility, and monetary policy to test the drivers of financial volatility in transition. The key implication from these results is that political stability needs to be tended to both in the formal realm and the informal realm in order to avoid potentially damaging financial volatility. The need for consistent political institutions remains in transition economies as much as in developed countries.

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Biographical Details:
Dr. Christopher A. Hartwell is a Research Professor at Kozminski University, President of CASE – Center for Social and Economic Research in Warsaw, and a leading scholar on the evolution of institutions. Dr. Hartwell's research concerns transition dynamics, the economics of institutions, and financial sector development. This paper follows in line with his work on the interactions of financial institutions and property rights done for the Bank of Finland's Institute for Economies in Transition (BOFIT). His current research program continues the approaches laid out in this paper, investigating how all stages of financial intermediation interact with other institutions in the economy. Dr. Hartwell holds a PhD in Economics from the Warsaw School of Economics and a Master's in Public Policy from Harvard. He is the author of *Institutional Barriers in the Transition to Market: Examining Performance and Divergence in Transition Economies* (Palgrave Macmillan, 2013).

Structured Abstract:
- Purpose: This paper looks at the effects of political volatility in transition economies to ascertain how nascent political institutions affect fledgling capital markets.
- Design/methodology/approach: I use asymmetric (GJR) GARCH modeling on monthly data for 21 transition economies on financial volatility, political volatility, and monetary policy to test the drivers of financial volatility in transition.
- Findings: I find that monetary policy remains a major driver of financial volatility, dominating all political institutions in terms of significance. However, informal political institutions and their volatility were much more important as determinants of financial market volatility than formal political volatility.
- Research limitations/implications: Further research needs to be undertaken in the interaction of political and monetary institutions, and how their interplay might affect financial market outcomes. One implication of this work points to the need to further explore the impact of "too effective" political institutions, that is, those that wield too much power.
- Practical implications: The need for consistent political institutions remains in transition economies as much as in developed countries. The key implication from these results is that political stability needs to be tended to both in the formal realm and the informal realm in order to avoid potentially damaging financial volatility.
- Originality/value: Use of monthly institutional data in transition is a breakthrough for institutional economics, as is the application of financial volatility models to institutional changes. Moreover, this paper amasses a unique dataset of both formal and informal political institutional changes in transition.

Keywords:
Volatility, political institutions, transition, stock markets

JEL Classifications: G20, O43, P30

Political Volatility and Capital Markets: Evidence from Transition

I. Introduction

The relationship between political instability and sub-optimal economic outcomes is an increasingly popular area of research in the economic literature. Starting with papers such as Alesina *et. al* (1996) and Brunetti (1997) and including recent papers such as Fatas and Mihov (2013) and Aisen and Veiga (2013), empirical evidence has pointed to a demonstrably negative effect of political volatility on economic growth and investment. This effect has been seen globally, with Campos *et. al* (2012) identifying both formal and informal political instability as hindrances to economic growth in Argentina, while Gurgul and Lach (2013) show that propensity for government changes has a negative impact on growth in Central and Eastern Europe (CEE). Heinsz (2004) also provides evidence for 172 countries over 18 years that political volatility leads to policy volatility, and thus dampened growth.

Further extensions to this research have explored the linkages of political volatility on other facets of the economy, including the effect of political instability on financial market volatility. Besides the observation by Roe and Siegel (2011) that political instability can hamper financial development in the first place, a large literature has arisen showing the impact of various facets of political changes on capital markets. One strand of this literature concentrates on the effect of political news on financial sector volatility (led by Engle and Ng's (1993) seminal paper and including Beaulieu (2005)), while another strand has concentrated on the functioning of political institutions themselves; in this vein, Arin *et. al* (2013) has showed the relevance of political variables for financial volatility in OECD countries while Hartwell (2014a) traced the effect of a particular type of political volatility (democratic transitions) on stock market volatility.

This literature relating political instability to financial market outcomes has also identified two interlinked but distinct channels through which political volatility can impact capital markets: the first, via the direct exercise of monetary policy and the way in which different parties/personalities utilize monetary policy in an economy; and the second, via a more indirect channel of overall policy uncertainty that accompanies both regularly-scheduled elections and informal political instability. The first channel has been extensively studied, with a long and established literature linking monetary policy with both levels of asset returns (Thorbecke 1997, Patelis 1997, Hsing and Hsieh 2012) and volatility of returns (Bernanke and Gertler 2012). The second channel has also seen some interesting work done, mainly relating the impact of government changes and political news on stock market volatility (Beaulieu *et. al* 2005).

However, what happens when it is not just a specific policy or even a group of policies that is feeding uncertainty, but when the whole institutional make-up of an economy is in flux? How do financial markets deal with an environment of monetary policy *and* political institutional volatility? This is precisely the situation that the transition economies of Central and Eastern Europe and the former Soviet Union (FSU) have faced over the past twenty years, as they have been building modern capital markets at the same time they have been erecting the institutions necessary to support these markets (Beck and Levine 2008). In many ways, the imperative of creating new political and economic institutions to facilitate the market economy collided with the challenge of fostering deep and broad capital markets to finance the private sector transition; in particular, the necessary change of political institutions engendered the exact sort of instability that would negatively impact financial markets.

Moreover, the end result of the political changes in the CEE and FSU countries was not (and in some countries, still is not) readily apparent, meaning that markets would be even more susceptible to volatility from the political arena. Would the latest change in party mean a return to a quasi-socialist past? Or had necessary reforms been "locked-in" and the political event in question was a matter of policy instead of institutions?

The purpose of this paper is thus to explore these links between political volatility and capital market volatility in the transition countries of CEE and FSU, controlling for policy changes such as differential monetary policies. My hypothesis is that increased political institutional volatility will feed through directly to stock market volatility, independent of and regardless of what is occurring in the monetary policy channel. Indeed, in an environment of rapid institutional change, monetary policy should mean *less* for the stock market's prospects than a country's political institutional vacillations.

This paper makes a unique contribution to the literature in several ways. While the theoretical premise between political volatility and stock market volatility is well-known, this analysis builds on recent empirical work (Campos *et. al* (2012), Goodell and Vähämaa (2013), Hartwell (2014a), and Smales (2015) to examine the effects of political volatility specifically on the financial markets of the transition economies of Central and Eastern Europe (CEE) and the former Soviet Union (FSU). These transition economies make an interesting case study for the effect of political volatility for, as noted above, they have been undergoing several different institutional changes concurrently; with nascent financial markets being created at the same time as a newly-democratized political class, there may be a larger effect of political instability on financial changes than in more established market democracies such as the OECD countries. In reality, the relative progress (or lack thereof) in various transition countries in achieving a more democratic process may be one of the issues of political stability that can affect capital market volatility (Hartwell 2014a).

Secondly, this paper also utilizes a unique monthly dataset of 21 transition countries over a shifting window from 1989-2012 to track institutional changes in transition. The dataset was compiled to deal with the differential time frames of political institutional changes and capital markets: institutions are generally thought of slow-moving creatures (their semi-permanence being what actually makes them an "institution" (Hartwell 2013)), but in transition, institutional changes move at a slightly higher speed. However, institutions themselves reform at different paces and some institutions are limited in how fast they *can* change (Roland 2004). Thus, annual-level data would miss the specific cause-and-effect of political institutional volatility, while daily data would not show any real change apart from structural breaks. On the other hand, the structure of financial market data is predicated on high-frequency movements, and thus utilizing annual averages would not capture the true effects of political changes on capital markets. This paper thus splits the difference between broader institutional changes (which are difficult to track on a daily basis) and stock market changes (which do occur on a daily basis) by examining monthly data. While some specific nuances may be missed in this monthly aggregation, the nature of persistent conditional volatility in stock market movements means that broader effects can indeed be examined. Apart from Hartwell (2014a), there is no use of monthly institutional data in transition in the literature.

Finally, this paper also has assembled, for the first time, a comprehensive dataset on monthly political changes across transition economies. While Gurgul and Lach (2013) utilize dummy variables for government changes and Hartwell (2014a and 2014b) examined the effects of the specific volatility surrounding democratic transitions, this paper goes further in examining the broad spectrum of political volatility, both formal and informal. By integrating these political institutional events by the month in

which they occurred across a broad spectrum of categories, this paper also brings together a higher-frequency and holistic examination of the many facets of political instability.

II. Literature Review

As noted above, there are two main channels through which political instability can affect stock market movements: the first is more directly to monetary policies, which may change as a result of personality, political ideology, external circumstances, or previous policy preferences. Of course, there is a large and established literature on the effects of monetary policy on stock market movements (Thorbecke 1997, Rigobon and Sack 2003, Christiano *et. al* 2012), with a recent and important (for our purposes) paper from Hsing and Hsieh (2012) showing that the growth of M2/GDP directly contributed to stock market volatility in Poland. Extending this literature to the drivers of the monetary policy volatility, we can see that there are proven links between the volatility of inflation and political volatility (Aisen and Vega 2008), with researchers finding that fragile polities tend to rely more on seignorage as a way to overcome political obstacles in enacting expansionary fiscal policies (Cukierman *et. al* 1992). Moreover, political instability has been shown to be both a cause and an effect of monetary profligacy, due to the endogeneity of monetary policy institutions to the political process; as Carmignani *et. al* (2008) demonstrate in their model, political instability can hamper central bank functioning (in particular its *de facto* independence), and thus lead directly to higher inflationary outcomes. This link was further extended by Papadamou *et. al* (2014) to show that central bank independence does indeed affect stock market volatility, thus closing the circle of causality from political instability to monetary institutions to financial volatility.

The second, and perhaps more independent, channel in which political instability can influence the stock market is related to the uncertainty regarding economic policies writ large that political volatility can engender. An enormous amount of scholarship has been dedicated to understanding the effect of "news" or "announcements" on financial markets (see, for example, Andersen and Bollerslev (1998), Bomfim (2003), Hayo and Kutan (2005), or Jiang *et. al* (2012)); the underlying premise of these analyses is that policy uncertainty up until and after the moment of a political or economic announcement drives higher levels of volatility than in periods of no news. In the case of political institutions, however, the "news" that can occur is not just limited to one press release or briefing, but is related to a multi-year policy stance (in the case of election of a new government) or the repercussions of informal and possibly recurring political stability (as in a terrorist attack) for the broader economy. These effects of policy uncertainty on financial markets, driven by underlying political volatility, can be magnified in a weak economic environment (Pastor and Veronesi 2013) or in countries where there is less experience with capital markets (Białkowski *et. al* 2008). In any case, as Low *et. al* (2011) show, political stability more broadly defined is an unmitigated positive for stock markets, as it removes investor concerns about policy uncertainty and lowers risk premia. On balance, markets do not like to be surprised, whether in the context of a single news briefing or in drastic changes in political institutions.

While there is a broad theoretical basis relating political volatility to stock market volatility, in order to understand which *specific political* institutions may have a greater impact on financial markets we need to refer to the growth literature, where much more research has been done in examining the effect of separate political institutions on growth volatility. For example, Brunetti and Weder (1998) found that constitutional changes (their measure of political volatility) negatively correlated with growth, while Svensson (1998) found that the probability of an imminent political change (derived from a probit model) harmed property rights formation, which then in turn hampered investment. Berggren *et. al*

(2011) find that instability in legal and policy institutions in rich countries actually contributes significantly to higher growth rates, while instability of social institutions is a drag on growth across all countries. However, Yang (2011) also finds that normal democratic processes tend to increase macroeconomic instability across the board, a finding echoed by Białkowski *et. al* (2008) and Boutchkova *et. al* (2012), who conclude that the variance of a country's major index return doubles during an election week. Finally, Belletini *et. al* (2013) provide evidence that, in democracies and partial democracies, persistence of political parties is negatively correlated with growth.

In contrast to the growth literature, there is comparatively less work done on specific political institutions and stock market volatility, with a focus almost exclusively on elections as the drivers of equity variance. Seminal work such as Niederhofer *et al.* (1970), Pantzalis *et. al* (2000), and, more recently, Białkowski *et. al* (2008) and Goodell and Vähämaa (2013), show the role of political uncertainty as encapsulated in elections tend to drive volatility around the event date. As Goodell and Vähämaa (2013:1116) note, the political uncertainty of an election "presumes that information regarding the probability of a particular election winner reflects information about future macroeconomic policy." Thus, approaching elections engender market anxiety, leading to a revision and continuous updating of expectations regarding future macroeconomic changes. Given the varying time-horizons inherent in a capital market and the differing behaviors of its participants, this can thus lead to volatility within a stock market as allocations are changed and positions reversed.

However, much like in the growth literature, there are differential effects of different types of political volatility. In particular, formal political changes such as an election may be anticipated well in advance, as well as being a one-off affair (unless there is scope for a run-off), so that volatility may settle quickly after an election (Santa-Clara and Valkanov 2003); moreover, the behavior of the party in power may be established fairly early on, or coalition talks concluded quickly, also contributing to a return to normalcy. Thus, these formal political channels may be supplemented by informal political volatility, including a host of variables. For example, external conflict or war in one's neighborhood can have a direct impact on stock market returns, as shown in the Middle Eastern context by Fernandez (2007) regarding the Iraq War. Terrorism as well may have severe impacts on financial volatility (Essaddam and Karagianis 2014), as may other manifestations of internal conflict. Even political instability as milquetoast as an entirely unexpected election result (Castells and Trillas 2013) or a senator switching parties (and thus control of government, see Jayachandran (2006)) can have major impact on financial market volatility in excess of normal.

Finally, as noted in the introduction, the case of transition economies, where the entire institutional system is in a state of flux, may exhibit greater pass-through to financial volatility from political volatility than the oft-studied OECD countries. While Hartwell (2014a) found little relationship between democratic volatility (i.e. changes in democratic institutions or ability of individuals to influence the political process) and financial volatility, the other types of informal instability may exert a stronger influence on burgeoning capital markets than merely the legislative framework accompanying democracy. Indeed, in places such as Russia where private organized crime once ruled but has now been overtaken by a predatory state (in the memorable words of Gans-Morse (2012), the problem used to be "the mob" but it's now "the man"), the (legal) ability to enter the political system have little practical effect if your life is in danger. Thus, it may appear that informal political institutions, and their (in)stability, would have more of an impact than formal channels; this would especially be true in barely-reformed transition economies such as Turkmenistan or Uzbekistan, where elections engender no surprises as to who will be the winner.

III. Model and Empirical Strategy

With the transition experience relatively unexplored from the standpoint of political institutional volatility, as noted earlier, the purpose of this paper is to examine three main hypotheses:

H1: Increased political institutional volatility in transition economies fed through directly to stock market volatility

Building on the extensive literature noted above, we should expect to see similar (if not more pronounced) effects in transition economies from political changes, working through monetary policy channels. With nascent monetary institutions and a slow move towards understanding central bank independence, political instability should translate into volatile capital markets.

H2: Informal political volatility should have a greater impact on stock markets in transition than formal political volatility.

As noted above, the relatively youthful nature of all institutions in transition economies, as well as the reality that many of the political institutions in some countries are Potemkin in nature (as in Belarus, Uzbekistan, Turkmenistan, or Azerbaijan), may make elections or government changes matter less for stock market performance. In fact, the only instance where formal electoral change may impact stock market movements would be if a firm was politically-connected and it lost its patron in an otherwise autocratic government.[1]

H3: Increased political institutional volatility in transition economies fed through to stock market volatility, independent of and regardless of what is occurring in the monetary policy channel

Finally, while both formal and informal political volatility can have a direct influence on monetary policy (for example, Aisen and Veiga (2008) show that political instability is associated with inflation volatility), I believe that political volatility in transition will also have a direct consequence on stock market volatility through expectations and policy effects. This effect should also be more pronounced in transition economies, given the relative fragility of their political institutions and capital markets *vis a vis* more advanced economies (Forestiere 2010), supplemented by the fact that the entire transition itself was a process of expectations augmentation.

In order to test these two hypotheses, a basic model relating financial volatility to institutional changes will be structured:

$$(1)\quad Y_{it} = \alpha + \beta POLINSTITUTIONS_{it} + \gamma MONETARY_{it} + \varepsilon_{it}$$

Where Y_{it} is volatility, calculated as originally in Merton (1980) and Perry (1982) as the log sum of squared daily returns of the stock market index for a particular country, aggregated monthly:

$$(2)\quad \sigma^2 = \log(\sum_{t=1}^{Nt} r\_{it}^2)$$

[1] However, this interesting question is beyond the scope of this paper.

In order to measure monetary policy as shown in Equation 1, the period change in M2, measured in percentage terms, is utilized. While this measure captures changes in monetary policies, it is perhaps monetary policy volatility that feeds into financial volatility (as shown in Okoli 2012); in order to capture this possibility, as a proxy for monetary policy volatility I utilize the rolling 3-month standard deviation of M2 changes (calculated using *rollstat* in Stata 13). This measure should give us some sense of any wild swings in in monetary policy, and how this might feed through into stock markets in the region.

The political institutions variable shown in equation 1 will be a matrix of various proxies for political instability, based on work from Campos *et. al* (2012) but extended upon to include a large mixture of formal and informal manifestations of political institutional volatility. The full list and description of the political variables is shown in Table 1 , but it is important to note that I attempt to capture both clear-cut signs of "informal" political instability (acts of terrorism, ethnic conflict) as well as more common "formal" instability (change of government, elections, constitutional changes).

[Table 1 here]

The estimator used for this exercise is the GARCH family of models, in order to capture the well-known conditional heteroskedasticity that accompanies financial market volatility (indeed, as Table 2 shows in regards to the volatility variables, conditional heteroskedasticity is indeed present in our data).[2] While the standard GARCH (1,1) model has been noted by Lunde and Hansen (2005) as a highly effective predictor versus other, more sophisticated, GARCH models, the idiosyncrasies of both this dataset and the reality of transition mean that perhaps additional sophistication is needed. Specifically, given that we can anticipate asymmetric responses to political volatility, where negative political volatility has more pronounced and persistent effect on stock market volatility than positive political shocks, a variety of asymmetric GARCH specifications may be utilized; based on diagnostics, the GJR-GARCH model of Glosten, Jagannathan and Runkle (1993) outperforms other specifications such as the (EGARCH) model of Nelson (1991), the threshold GARCH (TGARCH) model of Zakoian (1994), or the asymmetric power-ARCH (APARCH) of Ding, Granger and Engle (1993) , and thus is utilized here.

The GJR-GARCH framework models asymmetry as:

$$(3)\quad y_t = \mu + \varepsilon_t$$

where

$$(4)\quad \varepsilon_t = \sigma_t z_t$$

and

$$(5)\quad \sigma_t^2 = \kappa + \sum_{i=1}^{p} \gamma_i \sigma_{t-i}^2 + \sum_{j=1}^{Q} \alpha_j \varepsilon_{t-j}^2 + \sum_{j=1}^{Q} \xi_j I[\varepsilon_{t_{-j}} < 0] \varepsilon_{t-j}^2$$

The leverage coefficient in the GJR-GARCH model is represented by I, and it is weighted towards negative shocks in order to capture the persistence of negative changes as distinctly asymmetric from positive shocks. Thus, I=1 if ε_{t-j} is less than 0, and I=0 otherwise. Moreover, in order to ensure stationarity, the GJR-GARCH model also imposes four constraints:

$$(6)\quad \kappa > 0$$

[2] Perhaps not surprisingly, conditional heteroskedasticity is not present in the dummy variables, meaning that they will be modeled in the conditional mean, but not the conditional variance, regressions below.

$$(7)\ \ \gamma_i \geq 0, \alpha_j \geq 0$$

$$(8)\ \ \alpha_j + \xi_j \geq 0$$

$$(9)\ \ \sum_{i=1}^{p} \gamma_i + \sum_{j=1}^{Q} \alpha_j + \frac{1}{2}\sum_{j=1}^{Q} \xi_j I < 1$$

For this exercise, given the auto-correlative nature of the data and based on a partial autocorrelation function (PACF) plot (not shown here), an AR(1) term is also included.

Finally, a note is needed about the choice of GARCH modeling over other, perhaps more conventional, estimators. While System-GMM is robust to conditional heteroskedasticity, the high-frequency nature of the data and its sheer size makes such an estimator inappropriate for usage here: in the first instance, attempts to use System-GMM in this dataset resulted in an over-proliferation of instruments (even after collapsing instruments and restricting lags), a frequently-encountered issue that Roodman (2009) correctly notes leads to an imprecise estimate of the weighting matrix. Moreover, time-series volatility data, including the variables in this dataset, have a high degree of serial correlation that may generate spurious results in a GMM framework (see Hartwell 2014 for a fuller discussion). Finally, with financial volatility persisting around political events, longer lags of variables would be needed as valid instruments; however, as Tauchen (1986) notes, the bias of the System GMM estimator rises substantially with deeper-lagged variables, meaning biased confidence intervals and difficulty in making correct inferences. For these reasons, the GARCH specifications are preferred.

[Table 2 here]

The dataset assembled for this exercise came from a large variety of sources, including from Bloomberg and CEIC for stock market returns and M2 and other macroeconomic variables from the IMF's International Financial Statistics (IFS) database (or, where not available, from Eurostat or from the central banks of each transition economy). The political volatility variables were assembled from various public and proprietary sources, as shown above in Table 1, including heavy reliance on the International Country Risk Guide (ICRG) indicators for political stability. Other political volatility indicators were manually coded based on information obtained via public sources such as newspapers, Wikipedia, government and Ministry websites, and other researcher datasets such as Woldendorp *et. al* (2011) and Regan and Clark (2013).

IV. Results and Analysis

The results of the test of all hypotheses are shown in Tables 3-4, with financial volatility expressed as a function of political volatility. Table 3 shows the test of Hypotheses 1 and 2, in relating political volatility to financial volatility, in the absence of any controls. The specification arrived at after a series of diagnostic and post-estimation tests for each variable (apart from constitutional changes) is an AR(1)-GJR-GARCH(1,2) model, utilizing a generalized error distribution (GED), as opposed to a Gaussian (normal) one, in order to capture the "fat tails" of the political institutional variables (Bollerslev, Engle,

and Nelson 1994).[3] As Table 3 shows, across all variables, there is very little significance in the conditional variance equations, although the mild leverage effect of the GJR-GARCH model (and its lower AIC value as against a vanilla GARCH(p,q) model) shows that it is a more "correct" model of the political volatility. Perhaps more importantly, Hypothesis 1 is partially confirmed while Hypothesis 2 is entirely confirmed: while legislative strength showed marginal significance as an explanator of volatility in transition (with more powerful legislatures engendering more volatility), the informal political volatility dominated. In particular, the composite index of internal conflict and its sub-indicator of terrorism showed the greatest relationship with financial volatility. Given the backwards scaling of the two indicators (in that higher numbers mean lower risk of conflict or terrorism), the interpretation is clearly that the less internal conflict or terrorism, the less financial volatility. Similarly, albeit much more marginally, the government stability indicator shows that governments that have low risk of instability also correlate with more volatility, perhaps showing the perils of aggregation of power in the transition context.[4]

[Table 3 here]

For other indicators, such as presidential changes, elections, or cabinet reshuffles, there seems to be almost no relationship in transition between these events and financial operations. As an example, Belletini *et. al's* (2011) result regarding political persistence seems to not hold for transition economies (as shown in cabinet duration), a fact that can be explained by the differences between established democracies (who can expect to see diminishing returns to policies) and transition countries. In particular, not only has the only real longevity in transition economies been with countries that are not even "partial" democracies (Russia, Kazakhstan, Belarus, Uzbekistan, Turkmenistan, and Tajikistan stand out in this regard), the simultaneous move from autocracy to democracy means that there is a change in how businesses and actors relate to the government at the same time that governments are changing. Simply put, it is rather impossible for a government to have "longevity" in transition because the system it presides over at the beginning of its term is a different creature from what is present at the end. And, as the government stability indicator showed, it seems that it's not how long a government is in power, but how much power it actually wields.

Returning to our regressions, Hypothesis 3 is tested in Table 4, where the various monetary policy indicators are included. Rather than run each regression individually again as in Table 3, I have grouped the formal and informal volatility metrics and run them with the M2 change over the period. These groupings have resulted in a loss of observations but also better-fitting models. It is apparent from the first column that, once again, formal political institutional volatility has little effect on financial markets in transition, apart from elections, which have a marginally higher pass-through to stock market gyrations (also of note here is that the GARCH(1,2) model fit the whole formal institutions better than a GJR-GARCH model with a leverage effect). In terms of formal political volatility, elections have a larger absolute effect, but monetary policy remains the most significant explanator of (decreased) volatility. The case is much the same in the second column showing informal political volatility, where government

[3] The only exception was the external conflict indicator, which utilized a Student's t distribution due to difficulties in convergence with the GED distribution. Additionally, as noted, the GARCH(1,2) model fit the constitutional changes variable better than the GJR-GARCH model.

[4] A sharp-eyed reader may have noticed that the sub-components of government stability, legislative strength and government cohesion, are included as formal institutions, while the entire index is included as informal. This is due mainly to the fact that popular support is coded into the entire index, a concept that not only waxes and wanes on a daily basis but that personifies informality.

stability also has an impact on volatility in terms of size, but monetary policy dominates in terms of significance. From this analysis, therefore, it appears that Hypothesis 3 is disproven.

[Table 4 here]

*Robustness Test*s

As a robustness check, and as noted above, perhaps it is not monetary policy per se that drives financial volatility, but monetary policy volatility. To check if monetary policy volatility has more of an absolute influence, I include a measure of monetary policy volatility, the 3-month rolling standard deviation of M2. Columns 3 and 4. While the effects are fairly similar in terms of scope, monetary policy volatility loses some significance in the formal political volatility regression; in the informal model, as well, both internal and external conflict enter as significant, albeit in opposite directions. Paradoxically, it appears that, in the presence of monetary policy volatility, there is a mildly higher chance of financial volatility if there is *less* of a threat of external conflict. This could possibly be explained by the nature of the "external conflict" variable, which captures restrictions on operations to trade and investment sanctions; in an environment of high external conflict, there is less chance for capital flows to enter the economy or trade volume to really move, meaning a lower incidence of volatility accompanying lower volumes. On the other hand, when there is less chance of external conflict, say after sanctions have been lifted, there is an increase in volume and volatility in financial markets are part of the return to normalcy.

V. Conclusions

This paper has examined the effects of political volatility and monetary policy on financial volatility in transition economies. Perhaps not surprisingly, monetary policy remains a major driver of financial volatility, dominating all political institutions in terms of significance. Moreover, informal political institutions and their volatility were much more important as determinants of financial market volatility than formal political changes, with only elections and legislative strength showing some correlation with stock market gyrations. However, these results were heavily dependent upon the model specification. Future work is called for in this area to deal explicitly with the direct and indirect influence of political institutions on monetary institutions, as well as understand better how informal political institutions interact with formal ones in transition.

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REFERENCES

Aisen, A., and Veiga, F. J. (2008). "Political instability and inflation volatility," *Public Choice*, Vol. 135 nos. 3-4, pp. 207-223.

(2013). "How does political instability affect economic growth?" *European Journal of Political Economy*, Vol. 29 No. 1, pp. 151-167.

Alesina, A., Özler, S., Roubini, N., and Swagel, P. (1996). "Political instability and economic growth," *Journal of Economic Growth*, Vol. 1 no. 2, pp. 189-211.

Andersen, T. G., and Bollerslev, T. (1998). "Deutsche mark–dollar volatility: intraday activity patterns, macroeconomic announcements, and longer run dependencies," *Journal of Finance*, Vol. 53 no. 1, pp. 219-265.

Arin, K. P., Molchanov, A., and Reich, O. F. (2013). "Politics, stock markets, and model uncertainty," *Empirical Economics*, Vol. 45 no. 1, pp. 23-38.

Beaulieu, M. C., Cosset, J. C., and Essaddam, N. (2005). "The impact of political risk on the volatility of stock returns: The case of Canada," *Journal of International Business Studies*, Vol. 36 no. 6, pp. 701-718.

Bellettini, G., Berti Ceroni, C., and Prarolo, G. (2013). "Political persistence and economic growth," *European Journal of Political Economy*, Vol. 31 no. 1, pp. 165-179.

Bernanke, B., & Gertler, M. (2012). "Monetary Policy and Asset Price Volatility," in Evanoff D.D., Kaufman G.G., and Malliaris, A.G. (eds.), *New Perspectives on Asset Price Bubbles*, Oxford, New York, pp. 173-210.

Białkowski, J., Gottschalk, K., and Wisniewski, T. P. (2008). "Stock market volatility around national elections," *Journal of Banking & Finance*, Vol. 32 no. 9, pp. 1941-1953.

Bollerslev, T, Engle, R.F, and Nelson, D.B. (1994). "ARCH models," in *Handbook of Econometrics* (Vol. IV), Engle RF, McFadder DL (eds). Elsevier Science: Amsterdam.

Bomfim, A. N. (2003). "Pre-announcement effects, news effects, and volatility: Monetary policy and the stock market," *Journal of Banking & Finance*, Vol. 27 no. 1, pp. 133-151.

Boutchkova, M., Doshi, H., Durnev, A., and Molchanov, A. (2012). "Precarious politics and return volatility," *Review of Financial Studies*, Vol. 25 no. 4, pp. 1111–1154.

Brunetti, A. (1997). "Political Variables in Cross-country Growth Analysis," *Journal of Economic Surveys*, Vol. 11 no. 2, pp. 163-190.

Brunetti, A., and Weder, B. (1998). "Investment and institutional uncertainty: a comparative study of different uncertainty measures," *Weltwirtschaftliches Archiv*, Vol. 134 no. 3, pp. 513-533.

Campos, N.F., Karanasos, M., and Tan, B. (2012). "Two to tangle: Financial development, political instability and economic growth in Argentina," *Journal of Banking & Finance*, Vol. 36 no. 1, pp. 290-304.

Castells, P., and Trillas, F. (2013). "The effects of surprise political events on quoted firms: the March 2004 election in Spain," *SERIEs*, Vol. 4 no. 1, pp. 83-112.

Carmignani, F., Colombo, E., and Tirelli, P. (2008). "Economic and socio-political determinants of de facto monetary institutions and inflationary outcomes," t*he BE Journal of Macroeconomics*, Vol. 8 no. 1.

Christiano, L. J., Ilut, C., Motto, R., and Rostagno, M. (2012). "Monetary Policy and Stock Market Booms," in Evanoff, Kaufman, and Malliaris (eds.), *New Perspectives on Asset Price Bubbles*, Oxford: Oxford University Press.

Cukierman, A., Edwards, E., and Tabellini, G. (1992). "Seignorage and Political Instability," *American Economic Review*, Vol. 82 no. 3, pp. 537-555.

Ding, Z., Granger, C.W.J. and Engle, R.F. (1993) "A long memory property of stock market returns and a new model," *Journal of Empirical Finance*, Vol. 1 no. 1, pp. 83 - 106.

Engle, R. F., and Ng, V. K. (1993). "Measuring and testing the impact of news on volatility," J*ournal of finance*, Vol. 48 no. 5, pp. 1749-1778.

Essaddam, N., and Karagianis, J. M. (2014). "Terrorism, country attributes, and the volatility of stock returns," *Research in International Business and Finance*, Vol. 31 no. 1, pp. 87-100.

Fatás, A., and Mihov, I. (2013). "Policy volatility, institutions, and economic growth," *Review of Economics and Statistics*, Vol. 95 no. 2, pp. 362-376.

Fernandez, V. (2007). "Stock market turmoil: worldwide effects of Middle East conflicts," *Emerging Markets Finance and Trade*, Vol. 43 no. 3, pp. 58-102.

Forestiere, C. (2010). "Political Volatility and Governance in East Central Europe," *Slavic Review*, Vol. 60 no. 4, pp. 903-924.

Gans-Morse, J. (2012). "Threats to property rights in Russia: from private coercion to state aggression," *Post-Soviet Affairs*, Vol. 28 no. 3, pp. 263-295.

Glosten, L. R., Jagannathan, R., and Runkle, D. E. (1993). "On the relation between the expected value and the volatility of the nominal excess return on stocks," *Journal of Finance*, Vol. 45 no. 5, pp. 1779-1801.

Goodell, J.W., and Vähämaa, S. (2013). "US presidential elections and implied volatility: The role of political uncertainty," *Journal of Banking & Finance,* Vol. 37, no. 3, pp. 1108-1117.

Gurgul, H., and Lach, Ł. (2013). "Political instability and economic growth: Evidence from two decades of transition in CEE," *Communist and Post-Communist Studies*, Vol. 46 No. 2, pp. 189-202.

Hartwell, C.A. (2013). *Institutional Barriers in the Transition to Market: Explaining Performance and Divergence in Transition Economies.* Basingstoke: Palgrave Macmillan.

(2014a). *The impact of institutional volatility on financial volatility in transition economies: a GARCH family approach*. Bank of Finland Institute for Economies in Transition (BOFIT) Working Paper No. 6/2014.

(2014b). "Do (Successful) Stock Exchanges Support or Hinder Institutions in Transition Economies?" *Cogent Economics & Finance*, Vol. 2 no. 2, forthcoming.

Hayo, B., and Kutan, A.M. (2005). "IMF-Related News and Emerging Financial Markets," *Journal of International Money and Finance*, Vol. 24 no. 7, pp. 1126-1142.

Henisz, W. J. (2004). "Political institutions and policy volatility," *Economics & Politics*, Vol. 16 no. 1, pp. 1-27.

Hsing, Y. and Hsieh, W-J. (2012). "Impacts of Macroeconomic Variables on the Stock Market Index in Poland: New Evidence," *Journal of Business Economics and Management*, Vol. 13 no. 2, pp. 334-343.

Jayachandran, S. (2006). "The Jeffords Effect," *Journal of Law and Economics*, Vol. 49 no. 2, pp.397-425.

Jiang, G. J., Konstantinidi, E., and Skiadopoulos, G. (2012). "Volatility spillovers and the effect of news announcements," *Journal of Banking & Finance*, Vol. 36 no. 8, pp. 2260-2273.

Low, S. W., Kew, S. R., and Tee, L. T. (2011). "International evidence on the link between quality of governance and stock market performance," *Global Economic Review*, Vol. 40 no. 3, pp. 361-384.

Lunde, A., and Hansen, P.R. (2005). "A forecast comparison of volatility models: does anything beat a GARCH(1,1)?" *Journal of Applied Econometrics*, Vol. 20 no. 7, pp. 873-889.

Merton, R. (1980). "On estimating the expected return on the market: An explanatory investigation," *Journal of Financial Economics*, Vol. 8 no. 4, pp. 323-361.

Nelson, D.B. (1991). "Conditional heteroskedasticity in asset returns: a new approach," *Econometrica*, Vol. 59 no. 2, pp. 347-370.

Niederhoffer, V., Gibbs, S., and Bullock, J. (1970). "Presidential elections and the stock market," *Financial Analysts Journal*, Vol. 26 no. 2, pp. 111-113.

Okoli, M.N. (2012). "Return-volatility interactions in the Nigerian stock market," *Asian Economic and Financial Review*, Vol 2 no. 2, pp. 389-399.

Pantzalis, C., Stangeland, D. A., and Turtle, H. J. (2000). "Political elections and the resolution of uncertainty: the international evidence," *Journal of Banking & Finance*, Vol. 24 no. 10, pp. 1575-1604.

Papadamou, S., Sidiropoulos, M., and Spyromitros, E. (2014). "Does central bank transparency affect stock market volatility?" *Journal of International Financial Markets, Institutions and Money*, Vol. 31, pp. 362-377.

Pástor, Ľ., and Veronesi, P. (2013). "Political uncertainty and risk premia," *Journal of Financial Economics*, Vol. 110 no. 3, pp. 520-545.

Patelis, A. D. (1997). "Stock return predictability and the role of monetary policy," *Journal of Finance*, Vol. 52 no. 5, pp. 1951-1972.

Perry, P. (1982). The time-variance relationship of security returns: Implications for the return-generating stochastic process. *Journal of Finance*, Vol. 37 no. 3, pp. 857-870.

Regan, P, and Clark, D. (2013). *Institutions and Elections Project Codebook*. SUNY Binghamton, available at: http://www.binghamton.edu/political-science/institutions-and-elections-project.html.

Rigobon, R., and Sack, B. (2003). “Measuring The Reaction of Monetary Policy to the Stock Market,” *Quarterly Journal of Economics*, Vol. 188 no. 2, pp. 639-669.

Roe, M. J., and Siegel, J. I. (2011). “Political instability: effects on financial development, roots in the severity of economic inequality,” *Journal of Comparative Economics*, Vol. 39 no. 3, pp. 279-309.

Roland, G. (2004). “Understanding institutional change: fast-moving and slow-moving institutions,” *Studies in Comparative International Development*, Vol. 38 no. 4, pp. 109-131.

Santa-Clara, P., and Valkanov, R. (2003). “The presidential puzzle: Political cycles and the stock market.” *The Journal of Finance*, Vol. 58 no. 5, pp. 1841-1872.

Smales, L.A. (2015). “Better the Devil You Know: The Influence of Political Incumbency on Australian Financial Market Uncertainty,” *Research in International Business and Finance*, Vol. 33 no. 1, pp. 59-74.

Svensson, J. (1998). “Investment, property rights and political instability: Theory and evidence,” *European Economic Review*, Vol. 42 no. 7, pp. 1317-1341.

Thorbecke, W. (1997). “On stock market returns and monetary policy,” *Journal of Finance*, Vol. 52 no. 2, pp. 635-654.

Woldendorp, J., Keman, H, and Budge, I. (2011). *Party government in 48 democracies. Composition – duration – personnel.* Dordrecht: Kluwer Academic Publishers.

Zakoian, J.M. (1994). “Threshold Heteroskedastic Models,” *Journal of Economic Dynamics and Control*, Vol. 18 no. 5, pp. 931-955.

Table 1 - Political Volatility Variables

Variable	Description	Coding	Source
Cabinet Duration	Duration in days of the current government	number of days	Author's calculations, Woldendorp *et. al* (2011)
Constitutional Changes	The passage of any changes to the constitution within a country's legislature (does not count proposals)	1 if there was a change in constitution passed, 0 otherwise	Author's calculations
Elections	Regularly-scheduled elections or elections that occurred as a result	1 if there was an election, 0 otherwise	Author's calculations
Ethnic Tensions	Assessment of national, racial, or linguistic divisions in a country	0-6, with higher scores indicating less tension	ICRG
External Conflict	According to the ICRG, " the risk to the incumbent government from foreign action, ranging from non-violent external pressure (diplomatic pressures, withholding of aid, trade restrictions, territorial disputes, sanctions, etc) to violent external pressure (cross-border conflicts to all-out war)."	0-12, with higher numbers indicating lower risk of conflict	ICRG
Government Cohesion	A sub-component of government stability, the unity of a government in implementing proposals	0-4, with higher numbers indicating lower risk of instability	ICRG
Government Stability	Assessment of the government's ability to carry out its program and its ability to stay in office	0-12, with 12 indicating high stability and 0 low stability	ICRG
Internal Conflict	Assessment of political violence in a country, encompassing the terrorism sub-indicator and civil war and civil disorder risks	0-12, with higher numbers indicating lower risk of conflict	ICRG
Legislative Strength	A sub-component of government stability, the ability of a government to pass its legislation	0-4, with higher numbers indicating lower risk of instability	ICRG
Presidential Change	A scheduled or unscheduled change of the head of the executive branch	1 if there was a change in president, 0 otherwise	Author's calculations

Variable	Description	Coding	Source
Prime Minister/Cabinet Change	A scheduled or unscheduled change of either the head of government or the entire government	1 if there was a change in the prime minister or a cabinet reshuffle, 0 otherwise	Author's calculations
Terrorism	A sub-component of "internal conflict," the threat of terrorism or political violence in a country	0-4, with higher numbers indicating lower risk of violence	ICRG

Table 2 - Summary Statistics and GARCH Diagnostics

	n	Mean	Std. Deviation	Skewness	Kurtosis	LM-Statistic	Box-Ljung Q Statistic	Q-Squared	ADF Test
Volatility (Dependent) Variables									
Log of Squared Returns	2715	-7.34	1.173	0.607***	1.392***	194.11***	5682.37***	5851.63***	-16.459***
Log of Return Percentage Changes	2787	3.286	1.3516	-0.49***	1.96***	230.46***	13422.00***	8086.46***	-13.51***
Policy and Institutional Variables									
M2 Period Change	3225	1.5252	3.9757	-2.134***	171.41***	7.4967***	834.32***	100.32***	-26.96***
Cabinet Duration	3414	519.4	399.26	0.95***	0.39***	2040.8***	14065.1***	16188.4***	-0.09***
Constitutional Changes	3430	0.02	0.128	7.938***	61.015***	0.578	43.35	43.35	-1.05***
Elections	3881	0.02	0.143	6.6038***	41.610***	0.479	34.10	34.10	-1.07***
Ethnic Tensions	3598	4.2253	1.0081	-0.2074***	-0.68***	17319.0***	110701.0***	112986.0***	-0.01***
External Conflict	3598	10.669	1.0626	-0.6448***	0.3457***	7165.8***	73208.3***	73427.8***	-0.02***
Government Cohesion	2301	3.0576	0.64275	-0.365***	-0.466***	1133.1***	20219.4***	25085.1***	-0.09***
Government Stability	3598	7.9553	1.9672	-0.1847***	-0.5603***	3418.5***	53007.5***	56172.9***	-0.05***
Internal Conflict	3598	10.527	1.1795	-1.2387***	2.6724***	8931.1***	69108.1***	72853.6***	-0.02***
Legislative Strength	2301	2.7736	0.7067	0.2149***	-0.6659***	2599.6***	32699.7***	38663.9***	-0.05***
Presidential Change	3881	0.01	0.12	7.6118***	55.940***	3.03***	74.3312**	74.3312**	-0.82***
Prime Minister/Cabinet Change	3881	0.05	0.21	5.135***	24.369***	0.88	58.72	58.72	-1.12***
Terrorism	2301	3.4594	0.62469	-1.5416***	2.426***	5947.8***	62251.7***	60240.7***	-0.02***

Table 3 – GARCH Regressions, Political Volatility v. Financial Volatility

	AR(1)-GJR-GARCH(1,2)	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**
Conditional Mean Equation												
FORMAL POLITICAL INSTABILITY												
Elections	0.14											
	1.22											
Presidential Changes		-0.05										
		0.34										
Prime Minister/Cabinet Changes			0.06									
			0.78									
Cabinet Duration				-0.0001								
				0.33								
Constitutional Changes					-0.02							
					0.12							
Legislative Strength						0.15						
						*2.09**						
Government Cohesion							0.07					
							1.06					
INFORMAL POLITICAL INSTABILITY												
Internal Conflict								-0.14				
								*3.73***				
External Conflict									0.02			
									0.31			
Terrorism										-0.25		
										*11.31***		
Government Stability											0.05	

	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)
											*1.76**	
Ethnic Tensions												0.03
												0.61
C	-7.52	-7.51	-7.51	-7.51	-7.53		-7.79	-5.99	-7.64	-6.74	-7.90	-7.57
	*127.90***	*122.13***	*126.69***	*95.35***	*106.35***		*40.18***	*15.07***	*13.90***	*78.78***	*31.18***	*41.85***
Conditional Variance Equation												
Presidential Changes		-0.05										
		0.30										
Legislative Strength						0.08						
						1.34						
Cabinet Duration				0.001								
				0.30								
Government Cohesion							0.08					
							1.34					
Internal Conflict								0.04				
								1.20				
External Conflict									0.04			
									1.07			
Terrorism										0.07		
										1.02		
Government Stability											0.02	
											1.15	
Ethnic Tensions												0.02
												0.52
Leverage Term	-0.01	-0.04	-0.01	-0.01		0.05	0.04	0.03	0.03	0.06	0.03	0.03
	*1.74**	*0.63*	*1.78**	*2.02**		*2.20**	*1.95**	*2.28**	*1.97**	*2.60***	*1.79**	*1.93**
ARCH term 1	0.11	0.21	0.11	0.11	0.09	0.17	0.17	0.18	0.18	0.17	0.19	0.18

	AR(1)-GJR-GARCH(1,2)	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**	**AR(1)-GJR-GARCH(1,2)**
	*2.90***	*3.81***	*2.93***	*3.82***	*2.32**	*3.08***	*3.12***	*3.85***	*4.23***	*3.07***	*4.05***	*3.88***
ARCH term 2	-0.09	0.11	-0.09	-0.10	-0.08	0.18	0.18	0.18	0.17	0.18	0.18	0.17
	*3.39***	*1.93**	*3.50***	*4.14***	*2.80***	*4.15***	*4.14***	*4.85***	*5.17***	*4.16***	*5.00***	*4.73**
GARCH term 1	0.99	-0.48	0.99	0.99	0.99	-0.76	-0.80	-0.82	-0.83	-0.76	-0.79	-0.78
	*52.54***	*2.02**	*50.54***	*95.13***	*58.05***	*7.49***	*7.16***	*8.71***	*8.73***	*7.64***	*8.27***	*7.24***
AR Terms												
AR(1)	0.65	0.66	0.65	0.65	0.67	0.62	0.62	0.65	0.66	0.61	0.65	0.66
	*33.86***	*34.75***	*33.25***	*35.20***	*31.52***	*29.34***	*28.70***	*35.68***	*38.85***	*35.54***	*35.26***	*36.61***
n	2715	2715	2715	2568	2362	1923	1923	2492	2492	1923	2492	2492
Log Likelihood (absolute value)	3556.54	3573.62	3557.20	3331.19	3168.31	2462.33	2464.91	3235.70	3239.74	2460.51	3238.66	3242.76
AIC (Stata)	7131.086	7167.232	7132.4	6682.385	6352.617	4944.65	4949.82	6491.405	6499.482	4941.026	6497.329	6505.525
AIC (normalized)	2.6266	2.6399	2.6270	2.6022	2.6895	2.5713	2.5740	2.6049	2.61	2.569	2.607	2.611
Distribution	GED	GED	GED	GED	GED	GED	GED	GED	Student's T	GED	GED	GED

*Note: absolute values of t-stats are under the coefficients, with * signifying significance at the 10% level and ** at the 1% level.*

Table 4 – Robustness Checks

	AR(1)-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)
	1	**2**	**3**	**4**
Conditional Mean Equation				
FORMAL POLITICAL INSTABILITY				
Elections	0.21		0.20	
	*1.73**		*1.45*	
Presidential Changes	-0.10		-0.11	
	0.68		*1.10*	
Prime Minister/Cabinet Changes	0.09		0.10	
	1.18		*1.04*	
Cabinet Duration	0.0001		0.0001	
	0.57		*0.56*	
Legislative Strength	0.09		0.09	
	1.11		*0.38*	
Government Cohesion	-0.02		-0.02	
	0.22		*0.28*	
INFORMAL POLITICAL INSTABILITY				
Internal Conflict		-0.14		-0.20
		1.25		*1.83**
External Conflict		0.10		0.13
		1.34		*1.88**
Terrorism		-0.12		-0.06
		0.73		*0.36*
Government Stability		0.05		0.04
		*1.86**		*1.58*
Ethnic Tensions		0.01		0.04
		0.14		*0.16*
MONETARY POLICY				
M2 Change per Period	-0.0002	-0.0002		
	*2.92***	*2.93***		
M2 3-month standard deviation			-0.0002	0.00002
			0.69	*0.11*
Price of Gold, 6-month SD				
C	-7.81	-7.10	-7.83	-7.21
	*36.12***	*8.34***	*16.91***	*8.65***
Conditional Variance Equation				

	AR(1)-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)
	1	**2**	**3**	**4**
Presidential Changes	1.57		1.84	
	0.99		*1.14*	
Legislative Strength	-0.34		-0.26	
	1.52		*0.92*	
Cabinet Duration	-0.001		-0.0003	
	0.43		*0.45*	
Government Cohesion	0.18		*0.46*	
	0.52		*1.16*	
Internal Conflict		-0.23		-0.08
		0.96		*0.44*
External Conflict		-0.04		-0.05
		0.34		*0.50*
Terrorism		0.58		0.27
		*1.82**		*1.10*
Government Stability		-0.06		0.02
		0.84		*0.48*
Ethnic Tensions		-0.02		-0.01
		0.30		*0.16*
M2 Period Change	0.003	0.002		
	*2.75***	*3.40***		
M2 3-month standard deviation			0.01	0.004
			*2.62***	*2.49**
Price of Gold, 6-month SD				
Leverage Term		-0.03		-0.03
		*2.09**		*2.08**
ARCH term 1	0.17	0.18	0.15	0.17
	*3.76***	*4.32***	*3.55***	*4.08***
ARCH term 2	-0.15	-0.14	-0.13	-0.12
	*3.60***	*3.93***	*3.46***	*3.45***
GARCH term 1	0.96	0.94	0.95	0.90
	*52.17***	*27.47***	*25.73***	*12.15***
AR Terms				
AR(1)	0.61	0.62	0.60	0.61
	*27.45***	*28.19***	*27.47***	*27.24***
n	1751	1883	1747	1879
Log Likelihood	-2203.843	-2235.48	-2201.815	-2385.57
AIC (Stata)	4445.685	4810.961	4441.63	4811.139
AIC (normalized)	2.5389	2.5549	2.5424	2.5605

	AR(1)-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)	AR(1)-GJR-GARCH(1,2)
	1	**2**	**3**	**4**
Distribution	GED	Student's T	GED	Student's T

*Note: absolute values of t-stats are under the coefficients, with * signifying significance at the 10% level and ** at the 1% level.*