Supplying Infringements: Explaining EU Commission (Non)Response to Noncompliance

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Abstract

Democratic backsliding has the potential to threaten the legitimacy of the EU. However, the EU Commission, who is responsible for monitoring and enforcing EU law, has not always sanctioned backsliding or other noncompliant member state behavior. What can explain the Commission's (non)response to noncompliance? In this paper, I develop a supply/demand theory of Commission response. Supply-side factors shape the institutional context for action, including clock time. Demand-side actors provide information about violations and actor preferences. Using structural topic models, I demonstrate that when the Commission is short on time, it is less likely to sanction noncompliance. I also show that the Commission is more likely to act if it there is outside pressure from other relevant political actors, including EU citizens, and the European Parliament.

1 Introduction

Democratic backsliding constitutes a major threat to the current global political order in general, and to the European Union more specifically. The EU, however, has not always been quick to sanction member states who violate democratic norms and laws, even as several member states have recently seen dramatic democratic declines. What can explain why the EU responds to some member state noncompliance but not others?

In this paper I develop and evaluate a supply/demand theory of EU enforcement. I argue that EU response to noncompliance is more likely when supply-side and demand-side conditions are met. Supply-side factors *supply* the institutional context necessary for action, including sufficient time. When the Commission is short on time, it is less likely to sanction state noncompliance. Demand-side actors provide information to the Commission about violations and about actor preferences. The Commission can only act if it has information about violations or other demands for action.

To assess the supply strand of the theory, I develop an original measurement of Commission time. Structural topic models built from the Commission's weekly meeting notes from 2005-2020 first reveal latent topics discussed in each meeting, and second, quantifies the percent of each meeting spent on each topic. Several topics cover crises faced by the EU during this time period. As the measure of Commission action, I use country-year counts of infringement procedures, the formal process in which the Commission requests member state compliance with EU law.

I then test the statistical link between the time the Commission spends discussing crises and the number of infringements, hypothesizing that when the Commission is dealing with crises, they do not have time to deal with undemocratic member state behavior. The quantitative results support this conclusion. The number of infringements started by the Commission decreased significantly during all recent crises.

To gauge the effect of demand-side actors on infringements, I analyze the effects of demand from EU citizens and the European Parliament. As measures for individual citizen demand for EU action, I use the number of complaints lodged with the Commission each year, as well as survey results about citizen support for the EU. I hypothesize that when the number of complaints increases, or when EU support is higher, more infringements are likely. Quantitative evidence for this is mixed, but the number of infringements is positively associated with EU support.

To systematically identify instances of EP demand for Commission action I collected over 130,000 written questions from the Parliament to the Commission from 2005-2020. I argue that written questions can both inform the Commission about violations, and signal which issues the parliament believes are important. I find that the number of infringements does increase when there are more questions from the Parliament.

The paper will proceed as follows. Section 2 provides a brief introduction to EU monitoring and enforcement, then outlines my supply/demand theory in more detail. Section 3 defines my empirical strategy and presents results, with Section 4 concluding.

2   Background and theory

In September 2022, the European Parliament resolved that Hungary could no longer be considered a democracy, and demanded that the EU Commission take swift and decisive action (European Parliament News, 2022). In November 2022, the Commission recommended holding back 65% of the cohesion funds allocated to Hungary (European Commission, 2022a). This was approved by the EU Council in December 2022 (European Council, 2022), only three months after the EP's resolution. However, the Commission has not always been so quick to respond to member state democratic backsliding.

In March 2020 Hungary's government declared a "state of danger," claiming that the Covid-

19 pandemic necessitated emergency measures (Lazar, 2020). Less than two weeks later, the European Parliament issued a statement asking the EU Commission to investigate whether Hungary's "enabling act" violated EU law. The Council of Europe sent Prime Minister Orbán a letter in late March 2020, writing that the emergency measures, "restrict[ed] a number of individual rights and liberties enshrined in constitutions and in the European Convention on Human Rights (Burić, 2020)." Despite the condemnation of the law by two branches of the EU, on March 30 2020, the Hungarian Parliament approved an indefinite extension of the "state of danger" powers (Lazar, 2020; Wahl, 2020). In mid-April, the European Parliament approved a resolution declaring that the Hungarian "state of danger" extension was "totally incompatible with European values (European Parliament, 2020)" and suggested that all "available EU tools and sanctions (Wahl, 2020)" should be used to warn Hungary that the law was not acceptable. However, it was many months before the Commission took any action.

The EU has two main procedural ways to deal with member state non-compliance: the Article 7 procedure and the infringement procedure. Under Article 7, which has two phases, the EU Council can first officially warn a noncompliant state, and second, suspend state membership, conditional on European Parliament consent. Because launching the sanctioning arm of Article 7 requires unanimity, having an authoritarian head of state in the EU Council all but guarantees it will never be used. Having autocratic leaders therefore makes it difficult, if not impossible, for the EU to suspend a state in serious breech of its values. This is, in fact, the current state of affairs. Hungary, which is no longer considered a full democracy by Freedom House, and Poland, whose recent national court ruling threatens EU sovereignty, are likely to vote against the suspension of the other. The preventative arm of Article 7, which does not require unanimity, has been used twice. In December 2017, the Council formally warned Poland that it was violating EU judicial independence laws. One year later, in 2018, Article 7 was triggered against Hungary for human rights violations, and attacks on democratic institutions. However, because neither Poland nor Hungary will vote to suspend the other,

launching the preventative arm of Article 7 is largely considered a symbolic move, with no concrete consequences.
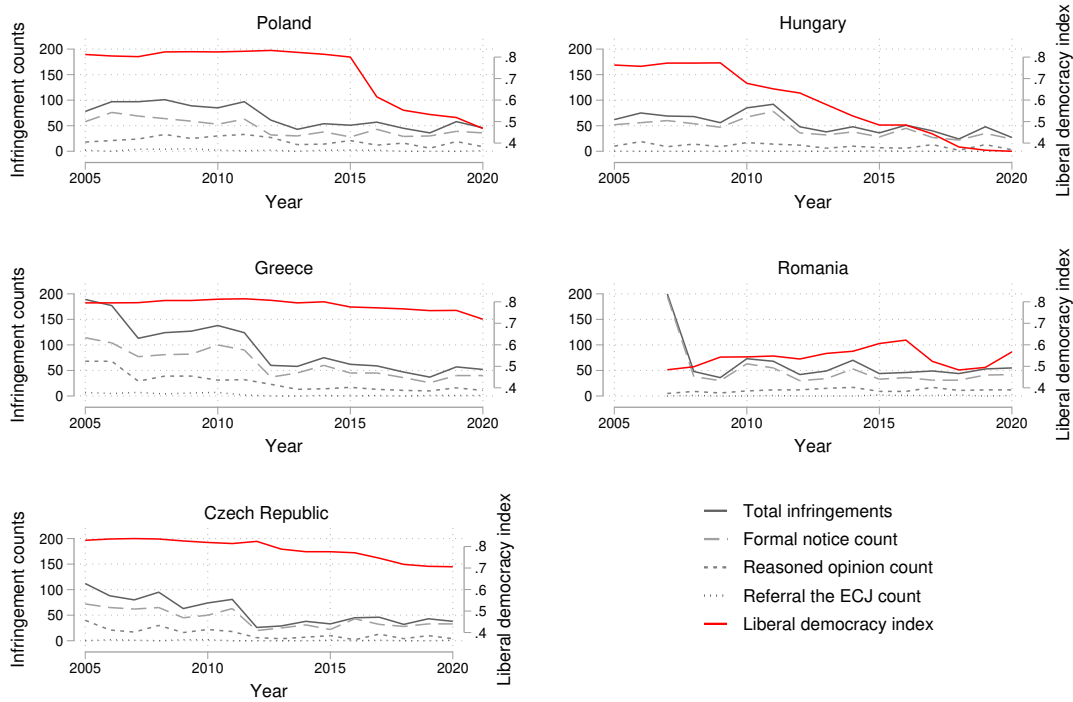
The second accountability mechanism is the infringement procedure, a multi-stage formal process where the EU Commission asks member states to comply with EU law. If a member state refuses to comply, infringements may ultimately end up before the European Court of Justice, where states can be issued fines for continuing noncompliance. Because member states are required by EU law to be democratic, we might expect that as liberal democracy has declined in Europe, the number of infringements would increase. However, this is not the case. Figure 1 compares the number of infringements with the Varieties of Democracy liberal democracy index for five European countries. Poland, Hungary, Greece, Romania and the Czech Republic have all experienced democratic erosion in recent years, with Poland and Hungary being the most egregious offenders. Yet, the number of infringements has largely remained the same, or even decreased. This pattern has occurred across all of Europe (see Figure 8 in Appendix A). What can explain this discrepancy?

In this paper I develop and test a supply/demand theory of enforcement. I argue that the Commission's decision to start an infringement (or not) is based on both the institutional context of the violations, which I call the supply side factors, and the demands of other relevant actors. Supply side factors shape what institutional action is possible, while demand side actors are catalysts that spur Commission action. Favorable supply side conditions and outside pressure increase the likelihood of the Commission sanctioning state misbehavior, including democratic backsliding.

2.1 Theory: Supply-side factors

Supply side factors largely fit into two categories–time invariant factors, and time dependent factors. Time invariant factors, as the name implies, largely remain constant over time. They

Figure 1: Infringement Counts & Liberal Democracy Scores 2005-2020

include laws outlining institutional responsibility for enforcement, as well as the mechanisms designed to encourage compliance. In the context of the EU, the Commission is legally responsible to hold misbehaving states accountable under article 258 of the Treaty on the Functioning of the European Union (TFEU), which deems the Commission the "Guardian on the treaties." It is the first necessary supply-side factor for EU enforcement–it outlines the Commission's legal duty to enforce EU law. The authority to hold states accountable has not changed over time, or been dispersed to other institutions.

While new instruments of enforcement have recently been initiated in the EU, including the Rule of Law Framework, they have not yet been used extensively. This means the mechanisms designed to enforce EU law have largely remained constant over time. As previously discussed, because the threshold for using the sanctioning arm of Article 7 is so high, it has never been triggered. Infringements, on the other hand, are issued every month from the

Commission to law-breaking member states. They can cover a lot of territory–infringements have been issued for noncompliant garbage handling, violations of asylum law, illegal over-fishing, the mistreatment of laboratory animals, and attacks on judicial independence, among many others. Infringement proceedings and Article 7 are the second time invariant supply side factor–they are the mechanisms of enforcement.

The last time invariant supply side factor is unique to the Commission. Unlike bureaucracies in other institutions, which are notoriously prone to growth over time, the bureaucratic capacity of the EU Commission has been static. This is the result of the tension between state and EU sovereignty. Unlike national governments which can raise taxes if needed, the Commission has no direct way to increase their revenue themselves. This means that unlike many other institutions, the bureaucratic capacity of the Commission is largely constant.

However, the Commission's ability to act as the guardian of the treaties is affected by one main time varying factor: clock time. In the context of monitoring and enforcement, clock time is a valuable resource. EU compliance literature has hinted at the Commission's limited resources and its effect on infringements (Blauberger and Kelemen, 2017; Börzel, T Hofmann, and Panke, 2012; Falkner, 2018; Jensen, 2007; Tallberg, 2000). I argue here that resources, specifically clock time (or lack thereof) helps explain why the Commission does, or does not, start infringement proceedings. This lack of clock time may explain why the Commission didn't immediately respond to Hungary's "state of danger law." In the first few months of 2020, the Commission was preoccupied with navigating the emerging Covid-19 pandemic.

Like other institutions, the Commission has many responsibilities in addition to their role as enforcer, and are therefore must make choices about how to allocate their time. Time is the ultimate zero-sum resource. The multi-step infringement procedure requires time for each step: time to launch the procedure with a letter of formal notice, time to address the state's response, and then time to write a reasoned opinion if noncompliance continues. If the issue is not resolved in these first steps, the Commission then needs time to build a case litigated

in the European Court of Justice. Each step of an infringement procedure needs time, but the amount of time the Commission has is finite.

To measure Commission time, I leverage data about the effect of exogenous shocks to clock time supply: crises. Exogenous shocks are, by definition, unexpected events requiring immediate political attention. Crises act as exogenous shocks to the Commission's time supply–they demand the reallocation of finite time. Due to the sudden, unplanned nature of crises, we can measure the effect of crises on Commission time. I argue that when the Commission is dealing with a crisis, they will start fewer infringements not because states are more compliant, but because clock time is limited.

2.2   Theory: Demand-side actors

Demand-side factors also need consideration. When other actors demand Commission action, the likelihood of an infringement procedure being started or moved to the next stage, increases. Again, because of limited bureaucratic resources, the Commission relies heavily on other actors to report states who break EU law. This reliance on extra-institutional actors for monitoring is referred to in the literature as fire-alarm oversight (Arras and Braun, 2018; Hobolth and Martinsen, 2013; Jensen et al., 2013), or even as demand for EU action (Arras and Braun, 2018; Hobolth and Martinsen, 2013). When violations occur, the monitoring institution can only act if they know there is a violation, or in other words, when other relevant actors demand action.

Like other executive institutions, the EU Commission has roles in several principal-agent configurations, sometimes as the principal, and others as the agent. In one, the Commission is the agent of member state principals. Member states here have given the role of enforcement to the Commission, and could theoretically withdraw that function (Börzel, T Hofmann, and Panke, 2012). Even here, member states are sometimes the agent for their citizen's demands

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(Tallberg, 2000). Ultimately, the Commission only has authority as long as member state governments and their citizens accept the legitimacy of the EU.

This becomes a problem for the Commission if domestic opinion becomes too Euroskeptic. It is well known in the literature that Euroskepticism is growing in both size and strength (Börzel and Risse, 2018), and it is quite possible than an overly active Commission will add fuel to the Euroskeptic fire. Principal citizens may decide they no longer want Commission enforcement (Blauberger and Kelemen, 2017; Gormley, 2017; Schlipphak and Treib, 2017). The Commission-agent has a fine line to walk, enforcing EU laws and values without causing member-state principals and/or their principal citizens to turn against the EU. This possibility has become quite real after Great Britain left the EU in part due to clashes over sovereignty and immigration.

Alternatively, member state citizens may also demand more action from the EU instead of less, especially if they stand to gain material benefits for state compliance. Because they have potential benefits to accrue, some actors will report violations directly to the Commission (Hobolth and Martinsen, 2013). For example, if a citizen of the EU wants to work in a different EU country, the Commission can help if the new country refuses to accept their professional qualifications. If a business wants to market a product in a different EU country, the Commission can intervene if the new country imposes additional requirements.

National governments may also act as principals demanding EU response, either because of violations in their own country, or violations in other member states. For example, members of the Supreme Court in Poland have asked the ECJ to decide on whether or not new laws affecting judicial independence are violating EU law. In this case, one part of the national government demands action from the EU against a different part of the national government. Poland's PiS government does not want more enforcement of EU laws, while some members of the Supreme Court do (Sadurski, 2019).

Another principal of the Commission is the European Parliament, both directly and indirectly. Members of the European Parliament may have political incentive to sound the alarm and directly demand action from the Commission. This is especially true for those who represent the opposition to their national parties, they may complain that their own governments are not following through (Jensen et al., 2013), or because other states are reneging. Additionally, while still lacking any formal agenda setting power (Jensen, 2007; Meijers and Van der Veer, 2019), new EU laws have to be approved by the EP.

However, the EP also has more indirect ways to influence the Commission; they help determine who leads the Commission, and who the Commissioners are. In other words, the Parliament has power over the political direction of the Commission. At the beginning of each new legislative period, the Parliament has to confirm the new Commission president and all Commissioners as a whole. They cannot pick and choose which Commissioners they do not like; if they feel strongly enough about the unsuitability of any one Commissioner, they can only vote down the entire group. In 2014, the Parliament threatened to vote down the incoming College over Hungary's EU Commissioner delegate–Tibor Navracsics, a member of Fidesz. He was nominated for the Commissioner over education, culture, youth and citizenship. Several MEPs were opposed to giving him that specific portfolio; Hungary has long segregated Roma children at school. In the end, the citizenship part of the portfolio was given to a different Commissioner. This incident makes clear that the Parliament can and will use its powers to influence the Commission.

The Parliament can wield its influence over the Commission in other ways. Meijers and van der Veer (2019) suggest that the Parliament signals their opposition to democratic backsliding by voting for or against EP resolutions, including the resolution demanding more EU action against Hungary for rule of law violations in 2020. These votes have no political teeth, but they do give the Commission information about what the Parliament wants. MEPs can also influence the agenda through written questions (Meijers and Van

der Veer, 2019). Members of parliament have the right to submit written questions to the Commission, and the Commission is required to respond (Jensen, 2007; Proksch and Slapin, 2011).

However, as the literature makes clear, agent preferences are often different than the principals–the preferences of the Commission do not always align with member state government preferences, citizen preferences, or even EP preferences. Indeed, Steunenberg (2010) argues that the Commission does not always start infringements against misbehaving states because Commission interests are not in alignment with the current law. In other words, "the Commission has its own preferences too."

To summarize, the Commission acts as both principal and agent along with member states, domestic citizens, member state governments, and the European Parliament in various configurations. I argue that when other principals demand EU action, the Commission is more likely to start infringements. While there are other actors who might turn to the Commission to address complaints, including other member states, businesses, NGOs and interest groups, in this paper, I focus on EU citizens and the European Parliament.

Overall, I hypothesize that EU Commission action depends on a combination of supply-side and demand-side factors. If the Commission is short on clock time, the likelihood of infringements is low. If demand is lacking, infringements are also less likely. When demand is high, and the Commission has time, the number of infringements should increase.

2.3   Alternative Explanations

In Figures 1 and 8, we can see that the total number of infringements has decreased over time. The literature largely ascribes this decline to either structure or strategy. In the structural camp, Börzel and Sedelmeier (2017) argue that infringements are down because of the stringent accession process used for states joining in 2004 and later. The structural con-

straints that pushed countries to adopt EU law before officially becoming members resulted in countries violating fewer laws than states who joined before. An additional structural based explanation is that the Commission is simply legislating less, giving states fewer opportunities to violate EU law (A Hofmann, 2018).

Another structural argument is made by Hoffman (2018), who suggests that there are fewer infringements because enforcement has been outsourced to national courts. Because the ECJ has ruled that EU law takes primacy over national law, citizens, businesses, and groups can appeal for EU rights through national courts. Others suggest that enforcement of EU law has shifted to other programs, like the EU Pilot system, a more informal channel for the Commission to handle member-state violations. However, even the number of Pilot cases has decreased dramatically since the mid-2010s. Furthermore, the Commission has publicly stated that more violations will go straight to the infringement procedure, bypassing the Pilot program (A Hofmann, 2018; Kelemen, 2020).

A second strand of enforcement literature argues that the Commission uses infringements strategically (Cheruvu, 2022; Fjelstul and Carrubba, 2018; Kelemen and Pavone, 2022). Fjelstul and Carrubba (2018) explain that at each stage of the infringement, the Commission has to decide whether or not it should sanction a state, after which the state has to decide whether or not to comply. Both the Commission and the member state make choices based on incentives and what they think the other actor will do in response. They explain that while many infringements never reach the last stage as a referral to the court, this does not necessarily mean that infringements are successfully resolved during an earlier stage. The Commission may choose not to advance an infringement if it believes it is unlikely that a state will comply. They assert that this has implications for our understanding of the effectiveness of Commission enforcement–while purposeful law-breaking is still occurring (and is not always sanctioned), the Commission is nevertheless successful at curbing noncompliance, "within politically realistic constraints (Fjelstul and Carrubba, 2018: 443)."

Keleman and Pavone (2022) contend that the Commission has issued fewer infringements in a strategic bid to shore up support for policy goals in the Council. Starting during President Barroso's tenure, the Commission worked to prevent further ire from national governments by not starting infringements against them, which they term purposeful forbearance. This does not mean that there is no enforcement happening. Instead of infringements, the Commission created several different instruments like the Pilot program, and the Rule of Law Framework, which officially open up dialogue between the Commission and an errant member state. However, these alternative mechanisms do not come with concrete deadlines for state compliance, while infringements do, and Kelemen and Pavone (2022) suggest that they even allow member states to remain noncompliant for longer stretches of time.

According to Cheruvu (2022), the Commission is more likely to pursue infringements if they believe a more pro-EU government will win the next domestic election. Because it is very costly for the Commission to start an infringement, get a ruling against the state from the ECJ, and still have state noncompliance, the Commission is careful about what infringements they pursue. Using the timing of national elections and the ideological preferences of new potential governments, Cheruvu (2022) finds that if the Commission expects an upcoming national election to make the government more pro-EU, they are more likely to advance infringements. The strategic argument here is that the Commission doesn't always enforce laws if they believe it will only add to anti-EU sentiment in member states. When they anticipate support from more pro-EU national governments, the Commission moves forward with infringement proceedings. Importantly, because infringements do remain open even without advancing to later stages, the possibility of advancing infringements at a later date remains open.

The literature presents several possible avenues to explain what Kelemen and Pavone (2022) call the mystery of disappearing infringements. Structural accounts reason that fewer infringements are the result of existing rules of the game. Countries who joined the EU from

2004 and later infringed less because they had to align their laws with EU laws before joining; or perhaps because the EU is legislating less, providing fewer opportunities to violate EU law. Other structural arguments claim that enforcement has been outsourced upholding EU law to other other actors including domestic courts, and other instruments like the Pilot program. Strategic theories assert that the Commission uses infringements (or a lack thereof) to get more intergovernmental support, or that they wait until national governments become more pro-EU.

In this paper I advance a supply and demand theory of Commission enforcement, which dovetails nicely with existing explanations. On the supply-side, I propose that there are structural causes behind fewer infringements–when the Commission has less time, there are less infringements. On the demand side, fewer infringements may also be the result of structure. The Commission relies on information from other actors about member state law violations, and without that information it cannot act. But the Commission can also be strategic–when other actors like citizens and the EP demand action, there will be more infringements.

3   Empirical Analysis

3.1   Dependent Variable: Infringement Counts

To measure Commission enforcement, I use a count of per-country-year infringements from 2005-2020, one year after the largest expansion of the Union. I collected infringement counts for each EU country from the Commission's online database. There are 43,717 observations within the specified time frame. These include all letters of formal notice, reasoned opinions, referrals to the ECJ, and notices of case closures. To create my dependent variables, I counted the number of observations per type by country and year. Ultimately, I ended up

with a data set of 436 observations, one per year for all EU countries. Each observation includes a count of the total number of infringements per year, letters of formal notice, reasoned opinions, and referrals to the ECJ as shown in Figure 2. Across time, the number of all types of infringements has decreased, even in countries were there has been significant democratic backsliding (see Figure 8 in Appendix A).

Figure 2: Infringement Totals 2005-2020
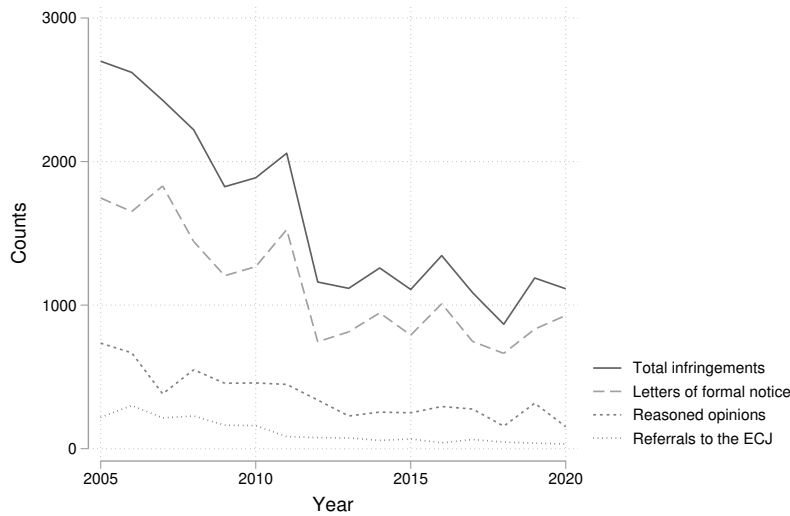
Source: EU Commission infringement database

Using infringement counts, however, may be statistically problematic–it is similar to selecting on the dependent variable, as every case is a positive case. We do not know about other potential infringements that were not started. This means analysis using infringement counts may be impacted by selection bias.

Earlier scholarship defended the use of using infringement counts (Börzel, 2001; Perkins and Neumayer, 2007; Tallberg, 2000). More recently, however, Fjelstul and Carrubba (2018) challenge the validity of using infringement counts to measure EU enforcement effectiveness because of strategic selection. My argument here is less about the effectiveness of infringements, while I certainly hope infringements can contain and reverse noncompliance (and evidence shows they can), and more about whether or not the Commission responds to

non-compliant state behavior.

In order to account for the effects of selection bias, I use several different dependent variables in my analysis: the total number of infringements, the number of formal letters, a count of reasoned opinions, and a count of ECJ cases. All models are run using each of these dependent variables. Because the dependent variables are count data, I use negative binomial models with robust standard errors, as suggested by Long and Freese (2014).

Finally, models are checked for robustness by breaking infringements down into two categories: non-communication infringements, and non-conformity infringements. When member states fail to report their progress implementing new regulations to the Commission, these infringements are classified as non-communication. Non-communication infringements may occur not because the state refuses to comply (although that also happens), but because they do not report their progress. Non-conformity infringements occur when a state refuses to get in line with EU law. Cheruvu (2022) finds that non-communication infringements are not effected by Commission infringement strategy, while non-conformity infringements are. Because my argument tests the effects of time and pressure (and is therefore based less on strategy), I expect that both non-communication and non-conformity infringements will decrease during crises, and increase with citizen or European Parliament demand.

3.2 Measuring Supply-Side Factors: Structural Topic Models

Supply-side factors are the institutional conditions that make Commission enforcement possible. They *supply* the feasibility of Commission action. One particular supply side condition varies: time, more specifically, clock time. The Commission has many responsibilities outside of monitoring and enforcing EU law. If they are engrossed in these other, non-enforcement tasks, they may not have time to deal with lengthy infringement procedures.

To measure how much time the Commission has, I leverage data collected from weekly Com-

mission meeting notes, which are published online. During these meetings, the Commission, "discuss[es] politically sensitive issues and adopt[s] proposals that need to be agreed on by oral procedure (European Commission, 2022b)" Commission meeting notes can tell us about what the Commission is doing, and how it is using its time. Topics covered are frequently linked to current events. For example, in a December 2022 meeting, the Commission discussed providing aide to Ukraine, a proposal on how to speed up use of renewable energy, and an action plan on military mobility (European Commission, 2022c).

In many ways, current events act as exogenous shocks to the supply of Commission time. Crises are an extreme example of such a shock. During crises, time spent dealing the crisis must necessitate less time being spent on other responsibilities, including monitoring and enforcing EU law.

But, how can we measure how much time a crisis takes? Simply including a dummy variable to indicate whether or not a crisis is taking place cannot provide us with much nuance. In addition, the temporal space of a crisis can often be debated–different sources may argue different start and end dates, making the boundaries of a crisis fuzzy. To more systematically measure time spent discussing crises, as well as other topics, I use structural topic models built from weekly EU Commission meeting notes. These models first reveal latent topics from weekly EU Commission meeting notes, and second, quantify the amount of time spent on each topic. In this way, topic models measure how the Commission spends it's political attention. To build my corpus, I collected all weekly Commission meeting minutes from 2005-2020, resulting in a data set of 671 sets of minutes. I then used R packages Quanteda and stm to build the model.

Topic models assume that each document in a data set contains a mixture of topics, and that each document has its own proportion of each topic. Documents in a collection will have varying topic proportions, however, all share the same set of topics. The words in the document are the observed variables; topic models use these variables to find the latent

topic structure within documents (Blei, 2012). Topics are defined by which features (specific words) are assigned to a specific topic. For example, words related to the topic Covid-19 might include, "pandemic," "vaccine," and "health." When these words appear in the text, they are classified as belonging to the topic Covid-19. When words like, "climate," "emissions," and "greenhouse" appear, they are assigned to a different topic, in this case, climate change. Topic models discover terms associated with a topic, and each topic will have a list of top terms. Because of the assumption that each document is a mixture of topics, one document can include words from both the Covid-19 topic, and climate change topic. For each document, the sum of topic proportions is equal to one. The sum of word probabilities for each topic is also equal to one (Roberts et al., 2019). Topical *prevalence* is the percent of a document associated with each particular topic. Topical *content* are the specific words within the topic.

One major challenge of working with topic models is that the researcher has to supply the number of topics, a quantity not necessarily known before hand. Too few topics will result in topics that are too broad, encompassing more than one discrete topic. Too many topics my divide coherent topics into several, sometimes too similar, topics. There are two features of topic models that help researchers choose an appropriate number of topics: exclusivity and cohesiveness. Topics with high exclusivity assign each word to only one topic. That means that a word like "crisis" gets assigned to only one topic, even if there are several topics that might include the word "crisis." In a model with an exclusivity score of 1, each word is assigned to it's own topic. Cohesiveness measures whether two words in a topic co-occur in documents within the topic. More topics means higher coherence between the documents. Importantly, there is a trade off between exclusivity and cohesiveness–higher exclusivity means less cohesiveness and vice versa. Scholars have to decide how to best manage this trade-off.

One tool for finding a useful number of topics is the searckK function from the stm R package.

This allows researchers to explore several possible topic numbers, then compare output to maximize topic utility. I examined a range of topics from 10-50, and based on these results, used 30 topics in my model (see Appendix B for more discussion).

Topic prevalence and top words for each topic are shown in Table 1. It lists the top words associated with each topic, as well as its overall prevalence. Expected proportions are the estimated proportion of each document made up of each topic. The most prevalent topic is topic 29, which includes common parliamentary language like, "committee," and "follow." Several topics do indeed capture the five crises faced by the EU during this time period: the Eurozone crisis, the migrant crisis, the Crimea crisis, Brexit, the rule of law crisis, and the Covid-19 pandemic.

Figure 3 illustrates the estimated prevalence of these eight crisis topics over time (shown with 95% confidence intervals). This is the approximated measure of Commission time. When the topic prevalence increases, the Commission is discussing that topic more frequently, leaving less time for other duties. Examining the top words in Table 1, combined with the time periods when the topics spike, provide face validity–the words and time periods are what we would expect.

As seen in Table 1, the Eurozone crisis was largely covered by three topics: topic 10, 16, and 7. Top terms associated with these topics include "economy," "crisis," "market," "growth," and "bank." The timing and peaks of the crisis clearly correspond with the sovereign debt crisis. Problems started to bubble up and appear in Commission meetings around 2008, after Iceland's banks failed, along with the Lehman Brothers bank. In 2009, it became clear that Greece would default on their debt payments, setting off a domino default effect–Portugal, Spain, Italy and Ireland all faced debt crises of their own in 2010. The crisis continued to effect the EU until the mid-2000s, only ending after several countries were bailed out by the

Table 1: Topics ordered by prevalence with top terms

Topic number	Expected proportion	Top terms
Topic 29	0.072	particular, follow, import, communic, need, committe, view, concern, take, present
Topic 7	0.059	econom, financi, measur, growth, need, market, crisi, import, bank, social
Topic 13	0.048	committe, hear, social, officer, econom, also, togeth, impact, transmiss, compani
Topic 5	0.046	import, particular, polici, need, also, present, communic, develop, relat, respons
Topic 25	0.044	migrat, refuge, need, countri, also, border, measur, migrant, support, turkey
Topic 21	0.043	negoti, countri, import, trade, progress, particular, need, access, relat, also
Topic 23	0.042	econom, fiscal, growth, budgetari, recommend, deficit, rule, govern, polici, euro
Topic 27	0.040	committe, take, servic, effect, appointment, applic, social, region, transmiss, iii
Topic 10	0.040	particular, import, also, need, econom, follow, crisi, develop, communic, respons
Topic 30	0.040	social, europ, polici, strategi, need, initi, work, citizen, debat, new
Topic 19	0.039	budget, financi, framework, fund, multiannu, polici, resour, payment, budgetari, new
Topic 22	0.039	take, effect, follow, concern, offici, particular, held, immedi, committe, taken
Topic 2	0.038	countri, also, econom, polici, discuss, need, situat, action, import, develop
Topic 12	0.034	energi, develop, climat, need, import, target, particular, gas, polici, emiss
Topic 1	0.033	ec, regard, rule, alreadi, framework, financi, compromis, establish, system, fund
Topic 28	0.033	ukrain, russia, russian, energi, polit, also, support, ukrainian, discuss, need
Topic 6	0.033	effect, appointment, take, applic, deputi, servic, consult, transfer, ad14, current
Topic 3	0.032	social, committe, nation, protect, data, servic, transmiss, market, econom, work
Topic 24	0.030	market, need, particular, case, competit, measur, question, import, discuss, concern
Topic 14	0.028	recoveri, measur, support, pandem, crisi, digit, need, health, also, strategi
Topic 8	0.027	negoti, uk, unite, present, discuss, follow, kingdom, withdraw, also, paper

Table 1: Topics ordered by prevalence with top terms continued

Topic number	Expected proportion	Top terms
Topic 16	0.027	bank, resolut, singl, financi, mechan, econom, nation, euro, need, discuss
Topic 4	0.022	recommend, deficit, ec, treati, transmiss, econom, particular, follow, import, fund
Topic 17	0.021	law, rule, also, new, measur, action, translat, hungarian, right, concern
Topic 9	0.019	fish, certain, ec, programm, regard, fund, also, financi, implement, list
Topic 26	0.019	initi, citizen, legal, treati, present, therefor, admiss, regist, act, colleg
Topic 11	0.014	effect, take, also, servic, applic, appointment, consult, nation, follow, committe
Topic 15	0.014	task, forc, servic, take, support, effect, measur, author, nation, financi
Topic 18	0.012	emiss, vehicl, transport, follow, action, new, also, industri, initi, translat
Topic 20	0.012	unit, chart, new, transfer, take, servic, polici, financi, effect, organisation

IMF and the EU. [1]

Two other topics from Figure 3 include the Covid-19 topic and Brexit topic. Words in the Brexit topic include "negotiate," "UK," "United," "British," "withdraw," and "Kingdom." In 2016, this topic becomes very prevalent, very quickly, as it was the year Great Britain voted to leave the Union. Its prevalence then slowly decreased, with a steep drop at the end, as negotiations became less newsworthy. Notice however, that as the Brexit topic declines, a new topic surges to replace it: the Covid-19 topic. Based on the timing, it appears that the Covid-19 topic may have even replaced the Brexit topic. Covid-19 words include "pandemic," "vaccine," "crisis," "Wuhan," "lockdown," even, "disinfectant." The figure shows that the pandemic was still taking up a significant amount of Commission time at the end of 2020,

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[1] A first reading of top terms would suggest that topic 23 is also a Eurozone crisis topic. However, an inspection of documents associated with topic 23 indicates that it is actually a more general economic topic. Additionally, topic 23's prevalence starts to increase after 2015, or in other words, after the crisis (see Figure 12 in Appendix D). This makes theoretical sense. Economic concerns are discussed in weekly meetings; during the Eurozone crisis, economic discussions got captured by the Eurozone crisis topics. We would expect there to be another economic topic covering the years outside the crisis.

Figure 3: Crises Topic Prevalence Over Time
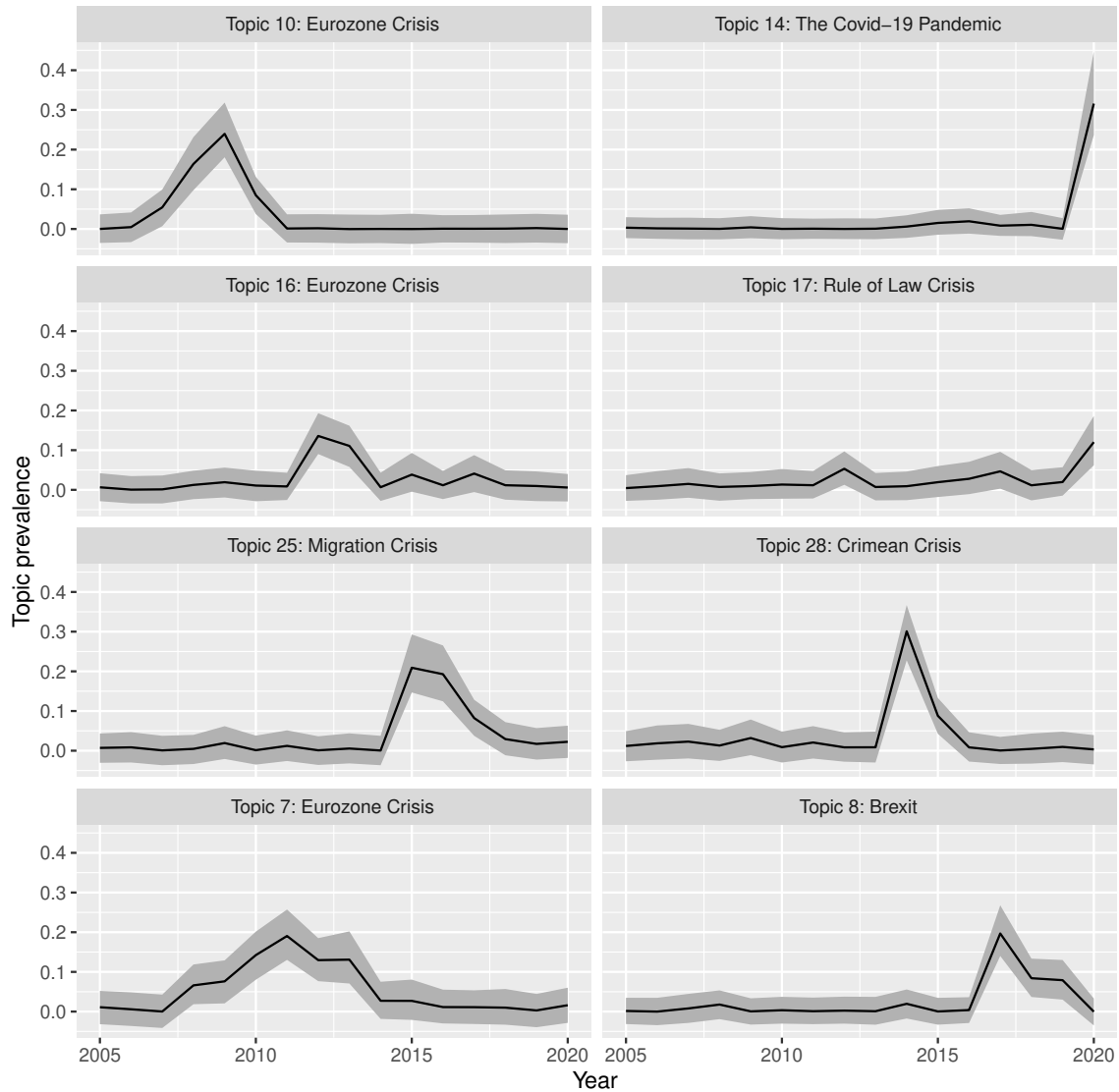
which indeed was the case. It is also noteworthy that the pandemic topic has the most sudden, most steep peak, with higher prevalence then any other crisis. This mirrors the suddenness, and all-consuming effect of the rapidly spreading global pandemic.

Topic 25 corresponds with the refugee crisis, triggered by a civil war in Syria. The figure shows that political attention to the crisis peaked in 2015-2016. This aligns with the crisis timeline. Almost one million refugees fled to Europe during 2015, the peak year for this topic. Top words from this topic include "migrant," "refugee," "border," "asylum," and

"relocate."

It it important to note that there are other text-as-data methods that could be used to measure crises. For example, I could have created key-word dictionaries for each crisis, then searched for, and counted, the number of times defined terms were used in Commission meetings. However, this has a major limitation-the only topics you get from dictionaries are the topics you expect to see beforehand. Structural topic models can reveal topics not initially on your radar.

Literature discussing crises faced by the EU usually include the Eurozone crisis, the migration crisis, and Brexit (Nugent and Rhinard, 2019). However, the topic model here finds two other crises topics: Russia's invasion of Crimea in 2014, and a rule of law crisis, which is still ongoing. The Crimea crisis includes the words, "Ukraine," "Russia," "Crimea," and "support." Crimea is likely not included because it did not occur in Europe, but next to. In light of the current war, it's important to include this in our crises measure.

Topic 17 coincides with a rule of law crisis in the EU, which is still going on today. Top words include "Hungary," "rule of law", "Roma," "infringement," "Polish," "women," and "racism." There is a bump in prevalence after 2010, perhaps reflecting Fidesz's undemocratic law changes. The prevalence of the rule of law crisis was on the rise at the end of 2020, reflecting challenges the EU is still facing in regards to democratic backsliding in Hungary and Poland. The steep slope of this latest increase may suggest that the Commission, and other EU institutions, are taking the rule of law crisis seriously; that it is less an ephemeral issue, and more a long term threat to the EU.

These topic prevalence scores are used as measures of EU Commission time. When the topic prevalence of a crisis is high, the Commission is spending more time discussing them in their weekly meetings. This means there is less time to respond to democratic backsliding and other state non-compliance. In order to validate topics, I follow the suggestion by Grimmer

et. al. to select a number of documents from each topic, then confirm that the topics are captured correctly. I do this for all topics. A selection of quotes from documents and all crisis topics can be found in Appendix C.

3.3 Measuring Demand-side Actors: EU Citizens and the EP

The second part of my theory argues that demand from other relevant actors for Commission action will make infringements more likely. Demand is therefore measured by aggregating actor preferences. Actors may prefer less EU intervention in domestic affairs, or may prefer more EU action. Because there are several different principal-agent configurations within the Commission and citizens, member states, and the Parliament, getting a complete measure of demand is challenging. While there are several actors who can demand EU actions, including businesses, interest groups, member state governments, and NGOs, I limit this analysis to the demands of two groups: EU citizens and the European Parliament. Importantly, each demand measure used in the models comes from information known to the Commission–the Commission must have direct access to information about the demands. In some cases, the Commission itself collects the data.

My first measure of citizen demand for Commission action is the number of citizen complaints filed with the Commission each year. Any EU citizen can file a complaint, but the Commission only pursues complaints if it determines that a member state is violating EU law. Complaints must be reviewed by the Commission within 12 months of submission, at which point the Commission decides whether or not to launch an infringement (European Commission, 2023). Not all complaints become infringements. However, it is likely that as the number of complaints increases, the number of complaints based on actual violations should also increase. Citizen complaints provide the Commission with information about noncompliance

The number of citizen complaints to the Commission comes from the Commission's Annual Report on monitoring the application of EU law. Intuitively, the number of complaints should be directly linked with citizen demand for action against law-breaking states. The more complaints there are, the higher the demand is for action, both because the Commission gets information from these complaints, and because complaints inform the Commission about issues important to EU citizens. Because complaints are made directly to the Commission, it has full knowledge about both the number and content of complaints. While I cannot measure this, I assume that citizens who don't like the EU are much less likely to submit formal complaints. I therefore hypothesize that as the number of citizen complaints increases, or in other words, as citizen demand increases, so do the number of infringements. Notwithstanding the difficulties of getting an accurate, cross-national measure of EU support, I use a question from the Eurobarometer survey to get my second measure of citizen demand. [2] I expect that as support for the EU increases, so do the number of infringements because the Commission is less concerned about increasing Euroskeptism.

The second main actor analyzed here is the European Parliament. I use a count of all written questions from the Parliament to the Commission from 2005-2020 as my measure for EP demand. The Commission is required by law to respond to all of Parliament's written questions,. While future work will scrutinize the content of these questions, here I rely on a logged count of questions submitted each year. The number of questions is unlikely to have a linear relationship with the number of infringements–once the number of questions reaches a certain threshold, the effect on infringements is likely to decrease. Commissioners cannot spend unlimited time responding to questions. I hypothesize that as the number of logged written questions increases, so does the number of infringements.

MEPs can use written letters both to report member state noncompliance, and ask for

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[2] The only question available for all years of this study is the question about EU image. The question asks respondents, "In general, does the European Union for you conjure up for you a very positive, fairly positive, neutral, fairly negative, or very negative image?" I use the average response, pooled by country-year using appropriate survey weights. It is also recoded so that higher numbers reflect a higher opinion of the EU.

further investigation on important issues. The possibility of a link between written letters and the number of infringements comes from the literature. One study from Jensen (2013) reports that in a sample of infringements, one in twenty infringements was started from written questions. Furthermore, a considerable number of written questions were about implementation of EU law-about 40% (Jensen et al., 2013). Again, because these letters are made directly to the Commission, we can assume that the Commission has complete information about the Parliament's written preferences.

In summary, I hypothesize that the number of infringements is likely to increase with higher demand from citizens, measured as complaints to the Commission, and surveyed opinions on the EU. When the EP demands more action, by sending more written questions to the Commission, the number of infringements should also increase. Demand from these actors should lead to more infringements.

3.4   Controls

Control variables come from EU compliance literature. Theoretically, if an EU member state has more power or influence, they may have fewer infringements, simply because they can prevent laws they don't want to comply with from ever being passed (Börzel, T Hofmann, Panke, and Sprungk, 2010; Scicluna, 2021). Economic power is measured through (the log of) GDP and (the log of) population size. Larger populations may have more influence in the EU (Jensen, 2007; Perkins and Neumayer, 2007; Toshkov, 2016). The log of GDP, also from the World Bank, is used as a control following similar logic. Larger budgets may reflect either a member state's greater power (Börzel, T Hofmann, and Panke, 2012; Börzel, T Hofmann, Panke, and Sprungk, 2010; T Hofmann, 2018), or their increased capacity to follow EU law, and thus may be correlated with fewer infringements. On the other hand, economic power may allow states to resist compliance, as financial penalties may hold less sting, leading to more infringements (Börzel, 2021).

To better account for member state capacity, government effectiveness from the World Bank is included (Cheruvu, 2022; Fjelstul and Carrubba, 2018). This measures a state's ability to mobilize resources and bring their laws into alignment with the EU (Börzel, 2021). Theoretically, better government effectiveness should lead to fewer infringements. I also account for the possible effects of intra-EU trading. Member states with more dependence on intra-EU trade may be less likely to have infringements because the benefits of membership are so high (Börzel, 2021; Perkins and Neumayer, 2007). Data about the percentage of total trade for both intra-EU exports and intra-EU imports are added together; numbers here come from Eurostat.

EU membership length is an additional control. Some literature suggests that the longer a state has been a member, the fewer infringements they will have, perhaps because it takes time for elites to learn how to cooperate in international organizations (Angelova et al., 2012; Mbaye, 2001). Not all scholars agree, however. Others suggest that being a member of the EU for longer periods actually results in more infringements (Mbaye, 2001; Perkins and Neumayer, 2007). Instead of EU membership years as a measure of learning, they instead argue that newer member states signal their legitimacy by being very compliant with EU law, and therefore getting fewer infringements (Perkins and Neumayer, 2007). More infringements might also be associated with longer EU membership, either because the number of EU laws has increased over time, or perhaps because states who have been in the EU the longest are the states with the most power, and therefore more able to resist compliance. Following Perkins (2007) and others, I use the log of EU years.

3.5 Results

Coefficient plots in Figure 4 summarize the effect of crises on infringements, broken down by stage. Generally speaking, when there is a crisis, the Commission starts fewer infringements. The models show a statistically significant dampening effect when the Commission spends

time on crises across all infringement types, and for all crises except for the Covid-19 crisis, with a few exceptions. The effect is not statistically significant for reasoned opinions during the rule of law crisis, or referrals to the court during the Eurozone crisis.

Notably, the effect of crises is not limited to any one stage of infringement. Total infringements, formal letters, reasoned opinions, and referrals to the ECJ are all negatively associated with Commission time spent discussing crises, except during the Covid-19 crisis and the other circumstances discussed above.

Figure 4: Effect of supply-side factors on all infringements, no controls
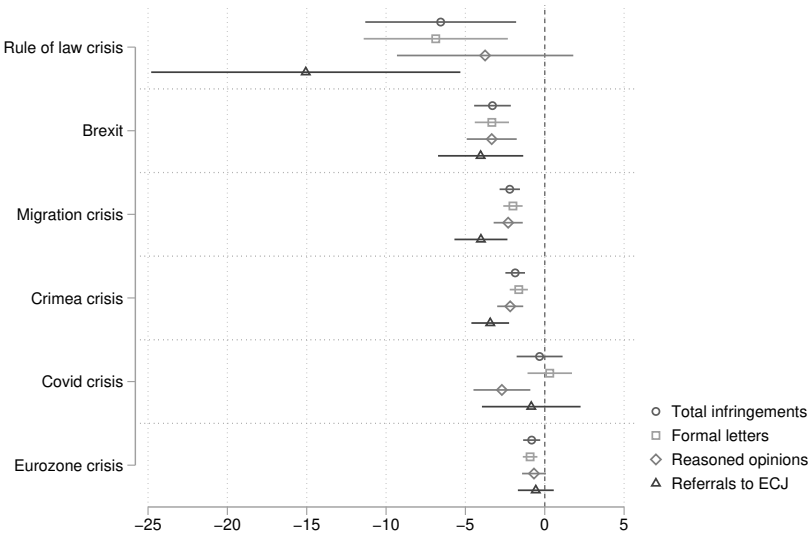
We can more easily interpret the substantive effect of crises using the expected percent change in infringements. According to the supply-side model with no controls, a one unit increase in time spent discussing the Eurozone crises leads to a 56.1% decrease in the number of infringements. For the migration crisis, the number of infringements decreases by 89.0%. During the Brexit crisis, infringement counts decrease by 96.3%, while the Covid-19 crisis only sees a 27.7% decrease. The rule of law crisis has the strongest effect-there was a 99.9% expected decrease in infringements. These numbers confirm that the negative relationship between crises and infringements is sizable.

Figure 5: Effect of supply-side factors with controls & fixed effects (not shown)
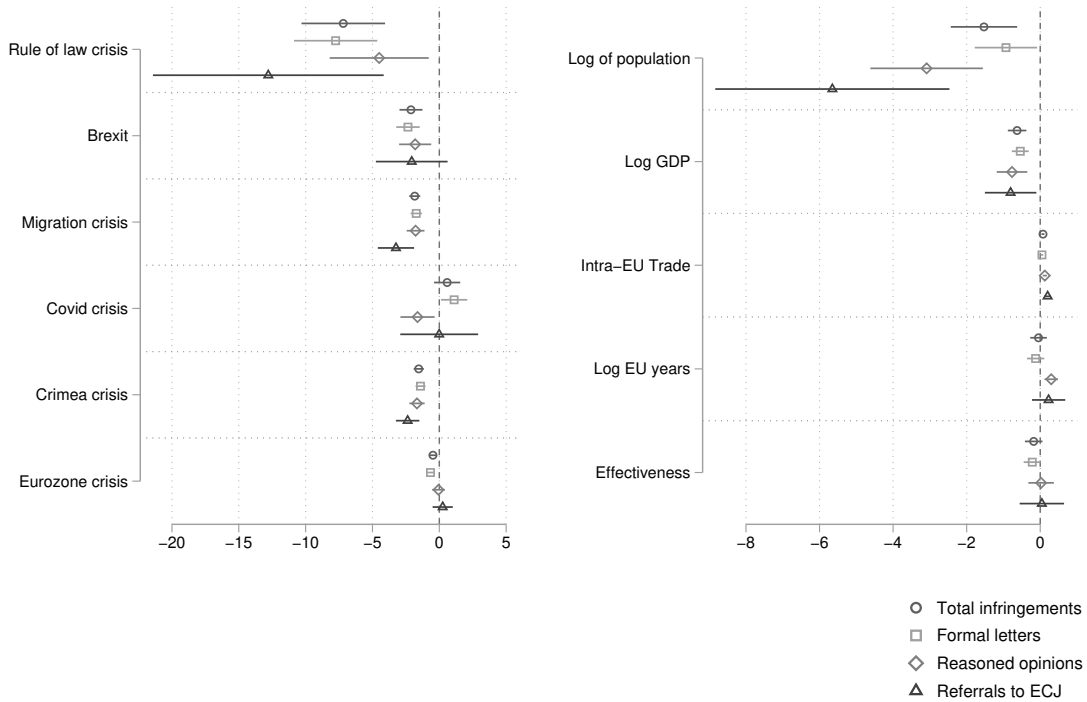
The negative correlations are robust to the inclusion of controls and country fixed effects, with a few exceptions (see Figure 5). The effect on referrals to the Court during Brexit loses statistical significance, but remains negative. Adding controls and country fixed effects also decreases the effect of the Eurozone crises on infringements, especially for reasoned opinions and referrals to the court, while the effects remain statistically significant for total infringements and formal letters of notice.

Additional model specifications further classify infringements as either non-conformity or non-communication infringements (results can be found in Tables 5-8, as well as Figure 12 in Appendix D). Chevuru (2022) argues that non-communication infringements, which occur when a state does not report their progress in complying with new EU laws, are less likely to be affected by the Commission's infringement strategy, as they are largely automatic. Non-conformity infringements, on the other hand, occur after a country refuses to comply,

and may therefore be more sensitive to the Commission's infringement program. The effect of time spent on crises remains significant for both non-conformity and non-communication infringements, except for non-communication infringements with controls and fixed effects during the rule of law crisis.

The supply-side models largely support theoretical expectations. Crises have a negative impact on infringements across all stages. The models suggest that when the supply of Commission time is low because of crises, the Commission is less likely to enforce EU law with infringements.

The correlation between the control variables and crises have mixed results (see Figure 5). The log of population is negative and statistically significant for all types of infringements and all crises. This means, in general, that countries with larger populations are likely to have fewer infringements. This could be explained by the link between population size and power in the EU, however, the model cannot make causal claims. The relationship between the log of GDP and all categories of infringements and crises are also negative and statistically significant, providing additional evidence that state power in the EU matters when it comes to infringements. Higher intra-EU trade is positively and significantly linked to the number of infringements, contrary to expectations. The log of EU years is not significant, except for a small increase in reasoned opinions, and neither is government effectiveness, except for formal letters.

The effect of demand side actors with controls and fixed effects (not shown) can be seen in Figure 6. Contrary to expectations, the number of complaints is not statistically significant in any model, with and without controls, using non-communication or non-conformity infringements (see Appendix D for all regression tables). This could be the result of a few different factors. First, many complaints may not actually be about member state noncompliance. Citizens can submit a complaint to the Commission without any pre-screening. The Commission then only follows up on complaints if they fit their definition of member

state noncompliance; perhaps many complaints do not fall into that category. Secondly, some complaints are more easy to resolve than others, and these may be addressed before becoming infringements.

Figure 6: Effect of demand side actors with controls & fixed effects (not shown)
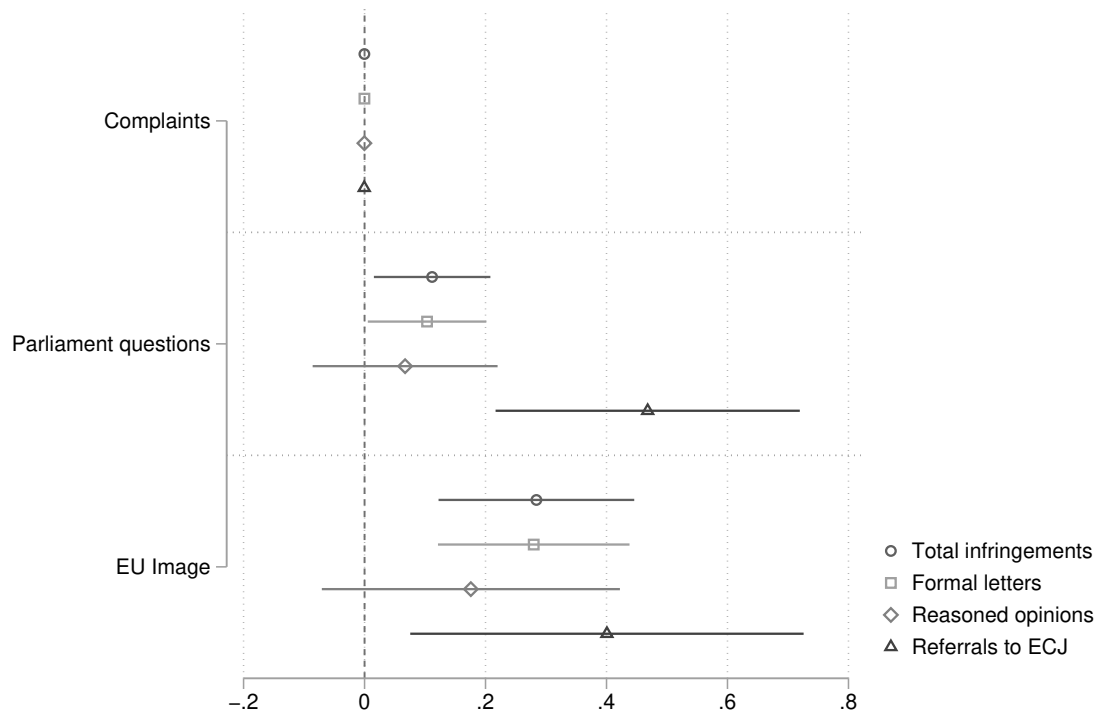
The correlation between the logged number of parliament questions is positive and statistically significant for all infringement stages except for reasoned opinions. Overall, a one unit increase in the logged number of parliament questions results in a 11.8% increase in infringements. However, it is not significant in models without controls and fixed effects, except for referrals to the court. The effects are also mixed and inconsistent for non-conformity and non-communication infringements. Furthermore, using the non-transformed number of parliament questions makes effects disappear (see Table 15 in Appendix D).

Similarly, EU citizen opinion is significant and positively associated with all infringement stages except for reasoned opinions, but again, only in models with controls and fixed effects.

It remains positive and significant using the non-transformed measure of EP questions. In general, a one unit increase in EU citizen support of the EU increases infringements by 32.9%. The effect of EU support is also positive and significant for total infringements and formal letters of notice when using non-communication infringements and controls, and positive and significant for total infringements and referrals to the court using non-conformity infringements and controls. This suggests that citizen support of the EU influences infringement counts.

Figure 7: Effect of supply-side and demand-side actors (no controls) 2005-2020
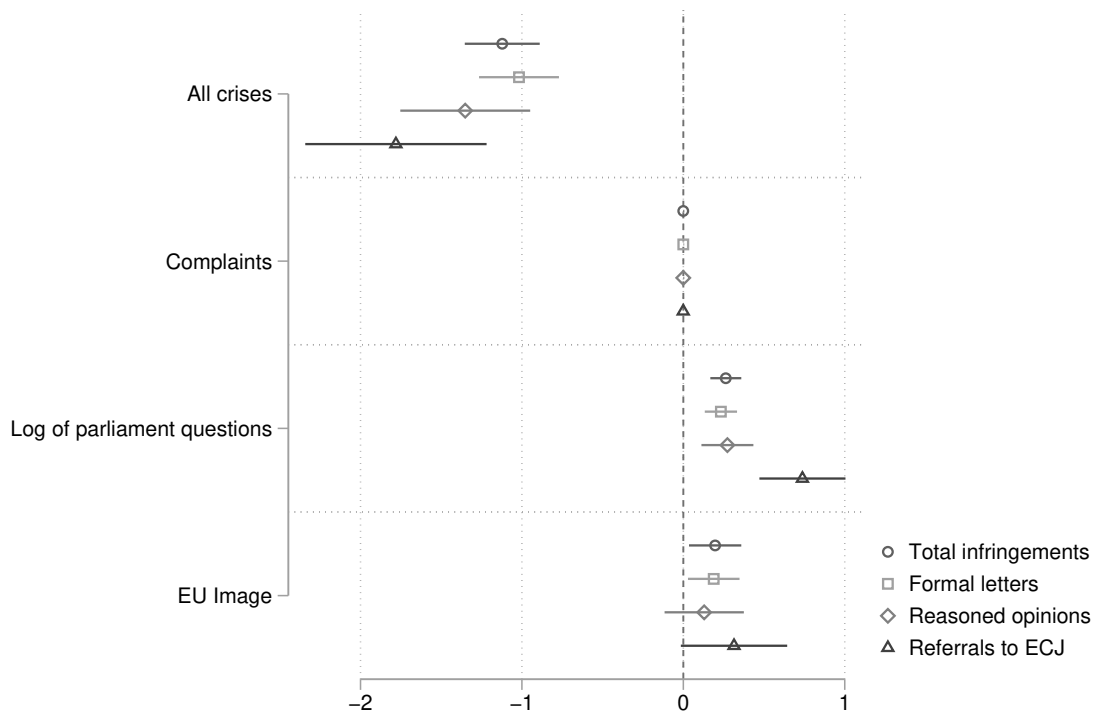
Finally, Figure 7 delineates the effects both of supply and demand factors on infringements. Commission time spent discussing crises is negative and statistically significant for infringements at all stages. According to the model with controls and fixed effects, a one unit increase in discussion of any crisis decreases the number of infringements by 67%. This is consistent with supply-side only models. Limited clock time may in fact hinder the Commission's ability to enforce EU law.

On the demand-side, the number of complaints does not have a substantive effect on infringements, in line with the demand-side only models. However, the logged number of parliament questions does have a statistically significant and positive effect on the number on infringements. In other words, questions from the European Parliament effect the number of infringements started by the Commission. [3] The effect is also substantial; a one unit increase in the logged number of questions increases infringements by 31.8%. This is likely caused by one of two mechanisms. First, questions from the EP may inform the Commission about member state noncompliance that was previously unreported or unknown. The Commission may therefore act based on the new information; when the Commission learns about noncompliance from the Parliament they respond. It is nonetheless also possible that questions from the Parliament signal to the Commission what issues the Parliament believes are important, what issues they would like the Commission to address.

Citizen support for the EU is also positively and statistically significant for total infringements and letters of formal notice. [4] An increase in support results in 23.6% more infringements. This also dovetails with the demand-side only models, and suggests that the Commission is more likely to respond to member state noncompliance if they believe citizens support the EU. The corollary to this is that Euroskeptiscm decreases infringements. Citizen opinion can shape EU action. If the Commission believes citizen opposition to the EU is high, they are less likely to start an infringement, which could possibly cause more Euroskeptism.

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[3]The effect of the non-transformed variable of Parliament questions is statistically significant, but the effect is not sizable, see Table 15. This is to be expected if there is a non-linear relationship between parliament questions and infringements.

[4]This result is robust to using the non-transformed parliament question variable.

4 Discussion & Conclusion

Questions about the Commission's ability or willingness to enforce EU law have become crucial in the face of the rule of law crisis. Poland and Hungary have seen dramatic democratic declines with little response from the EU. This paper adds to the enforcement literature by outlining two possible explanations for the (lack of) Commission action: a lack of time, and a lack of demand.

Overall, the supply-side model largely fit expectations. Crises have a significant dampening effect on the number of infringements started by the Commission. All six crises in this study were associated with fewer infringements across all infringement stages, except for the Covid-19 crisis. This aligns with theoretical expectations. There are only so many minutes in a meeting, and the Commission has to decide what to give their political attention to. Crises demand more attention, leaving less time for the Commission to monitor and enforce EU law.

This has important implications for the EU. Since 2008, the EU has faced crisis after crisis. Currently, the EU is involved in the war between Ukraine and Russia, which is not expected to end soon. There are likely other crises on the horizon. Crises make it harder for the Commission to do its job. It cannot enforce the law effectively when it is focusing on other necessary and important tasks.

On the demand-side, while complaints were not significant, the log of parliament questions and the level of EU support both had a positive and statistically significant effect on the number of infringements. This provides evidence that while other actors cannot directly sanction member states, they can influence whether or not the Commission does. More work is needed to untangle possible mechanisms, as parliament questions can either inform the Commission about violations, or signal their preferences about noncompliance. The link between citizens and the Commission suggests that growing Euroskeptism may impact the

Commission's ability to enforce EU law.

Future work should more directly test the supply/demand model of infringements with alternative explanations. These include whether or not the Commission is outsourcing enforcement, whether states are more compliant with EU law now than in the past, whether the Commission waits for more pro-EU domestic governments, or uses purposeful forbearance when deciding whether or not to start or advance an infringement.

This paper illuminates the possibilities and limits of Commission response to noncompliance and democratic backsliding among EU member states. I find evidence that time constrains the Commission, and that it affects their ability to act as guardian of the treaties. I also show that other political actors, including EU citizens and the European Parliament, can shape institutional responses to noncompliance.

While not always successful, infringements from the Commission can and do influence state behavior, but they are are currently underutilized. I demonstrate here that while addressing member state noncompliance is a matter of time, demanding more from our institutions may be a way forward.

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Appendix A: Liberal Democracy & Infringements in Europe

Figure 8: Infringement Counts & Liberal Democracy Scores 2005-2020
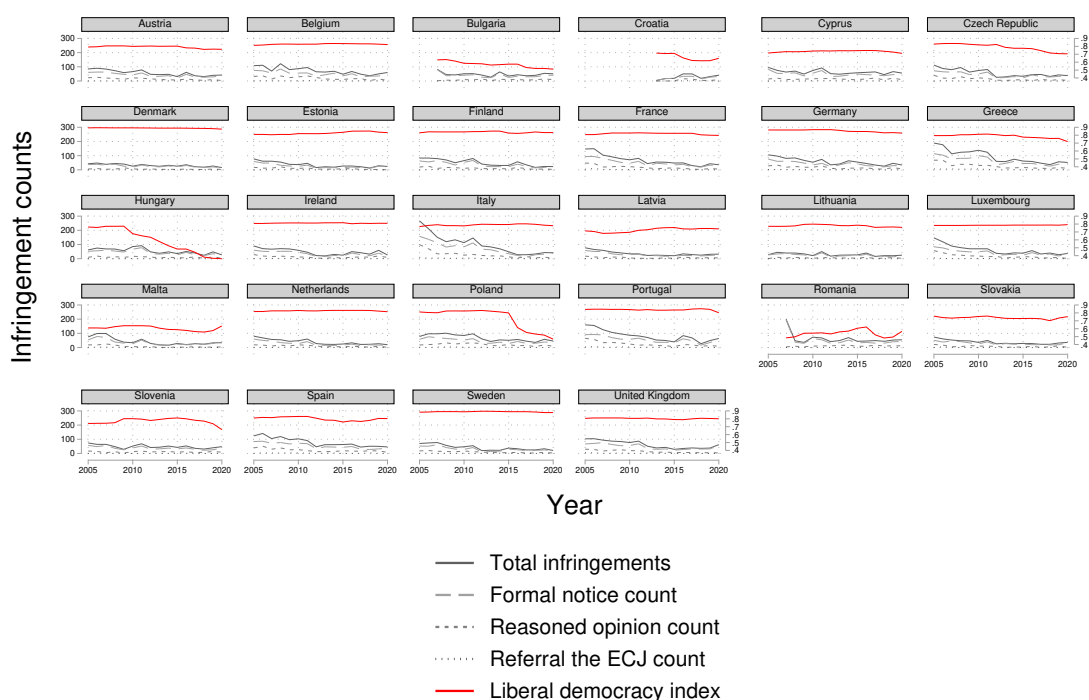
Appendix B: Validating the number of topics

One challenge when using topic models is the difficulty of selecting the most useful number of topics. Grimmer, Roberts and Stewart (2022) argue that a specific collection of documents does not have an inherent "true" number of topics. Because of this, researchers must validate their models in several different ways to ensure that the concept they are trying to measure is indeed the concept that is being measured (Grimmer et al., 2020).

One way to determine the "right" number of topics is with statistics. The left hand panel in Figure 9 illustrates several model diagnostics using the searchK function from the R package stm. This function runs and evaluates topic models with different numbers of topics, in this

case, with 10, 20, 30, 40, and 50 topics. The held-out likelihood test is similar to cross-validation. Data gets split into two groups, and one group of data is set aside, the test set. The remaining data is used in the training set. A model is fit using training set; information from that model is then used to predict results in the test set and check for accuracy. The model which scores higher on the held-out likelihood test is more likely to be the "right" number of topics (Silge, 2018). In Figure 9, the number of topics with the highest scores are actually the models with fewer topics, with 10 topics having to highest likelihood. However, Minmo et. al. (2011) argue that a computer's prediction of topics does not always match up with human predictions, as computers may link words that seem disparate to human readers as topics. Grimmer et. al. (2022) also warn that computer based topic divisions are not always the most useful. Furthermore, the other diagnostic tests suggest that ten topics is far too few.

The residuals test checks to see if the residuals are overdispersed. According to Roberts et. al. (2019), "if residuals are overdispersed, it could be that more topics are needed to soak up some of the extra variance (38)." Thus, the number of topics with the smaller residuals may be better than those with higher residuals. Below, the number of topics with lowest residual score range from 25-40. This suggests that the "right" number of topics may be in that range.

The final panel in the left-side figure measures semantic coherence. Semantic coherence happens when, "pairs of words belonging to a single concept will co-occur within a single document, word pairs belonging to different concepts will not (Mimno et al., 2011: 265)." That means when certain word pairs occur together in the same document, take for example, "security" and "defense," the document is more likely to be about a specific topic, say military spending, than a text which includes the words "security" and "migrant." Semantic coherence is maximized when words belonging to a topic co-occur in documents assigned to the topic (Grimmer et al., 2020). According to the left-hand panel, semantic coherence is

maximized with ten topics.

However, semantic coherence has to be balanced with exclusivity. Topics have high exclusivity when top words from one topic do not occur in other topics . However, as exclusivity increases, semantic coherence decreases. "Good" topic models manage the trade-off between semantic coherence and exclusivity by having enough topics to capture the useful variation without dividing one distinct topic into too many separate topics (Grimmer et al., 2020).

The right side panel of Figure 9 shows the relationship between exclusivity and semantic coherence using different numbers of topics for EU Commission meetings. The fewest number of topics, 10, has the highest semantic coherence scores, but has very low exclusivity. Using 30 or 40 topics appears to maximize semantic coherence and exclusivity, although using 40 topics has a much wider range of exclusivity scores.

Figure 9: Model Diagnostics

Appendix C: Validating the content of topics

Another way to validate topics is to select, read, and hand-label texts from each topic (**Grimmer2022**). Figure 10 presents a selection of text for each crisis topic. These selections confirm that the topics do in fact capture each specific crises topic.

Figure 10: Selections of crisis topic text

Topic 8: Brexit Crisis

EU proceedings under way before the UK...s withdrawal, whether it be a case before the Court or at administrative level, such as infringement proceedings or decisions on state aid, could be concluded and take effect even after the UK had left the Union. This was vital to guarantee a level playing field in the single market and ensure that the UK met its obligations up until its withdrawal. He also explained that the Union was proposing that the Protocol on privileges and immunities should continue to apply to the Union...s activities after withdrawal so that the European Investment Bank could carry on its activities in the United Kingdom in order to ensure the smooth relocation of the agencies currently based in the UK. On the question of fissile material, Mr BARNIER explained that the Union expected the

Topic 14: Covid–19 Pandemic

transitions For that to happen, the administrative burden on SMEs should be reduced further in order to give them easier access to the market, and implementation of the Late Payment Directive would have to be closely monitored. He ended his presentation by declaring that only a strong and competitive European industry could guarantee the quality of life, high–quality jobs and high level of social protection that European citizens needed. Mr BRETON pointed out that the proposed industrial strategy was being presented in the particular context of post–globalisation, not to mention the more immediate context of the COVID–19 crisis, which affected not only the health of citizens but PV(2020) 2329 final – English language version of the French text which is authentic – EN 18 PV(2020) 2329 final (10 March

Topic 16: Eurozone Crisis

friendly development and access to the internet. The PRESIDENT concluded the discussion, highlighting again the need for the Commission to show a united front more than ever at this crucial stage, the need for the group of Commissioners dealing with the multiannual financial framework to hold regular meetings, and the need to ensure that the College was updated on this dossier as often as necessary. He also stressed that the Commission must stick to the proposals made, emphasizing that they formed a modern and coherent budget that favoured growth and provided responses to the crisis, and work actively, in particular with European regions, to help convince governments of the importance of supporting these proposals. He pointed out the work that still needed to be done, in particular with regard to own resources, in order to present

Topic 25: Migrant Crisis

proposed a broad strategy to address the immediate challenges posed by the current crisis and equip the EU with tools to manage migration better in the medium and long term in the areas of irregular migration, borders, asylum and legal migration. Mr TIMMERMANS focused on the most complex issue in political terms, i.e. the common European asylum system. The refugee crisis had revealed shortcomings in this system and the Commission was today launching a process of reflection and reform. He explained that on the basis of the outcome of the policy debate held by the College on 16 March and of an in–depth analysis, the Communication suggested two options for ensuring a fair and sustainable system to determine the Member State responsible for examining asylum applications, and therefore for the distribution

Topic 28: Crimea Crisis

for the US administration to make any major concessions before the mid–term elections in the US. He finished by saying that Mr DE GUCHT remained in close contact with the United States Trade Representative, Mr Froman, and that a report would shortly be drawn up on the basis of which the group of Commissioners responsible for the TTIP could then decide what action to take. Baroness ASHTON then reported on the situation on the ground in Crimea, confirming that Russian forces now held all the Ukrainian military bases and warships, having ordered the Ukrainian soldiers to leave the territory. She explained that the illegal annexation of the region by Russia was starting to give rise to the displacement, at present on a small scale, of Ukrainian refugees and Tatars, most of whom were heading

Topic 17: Rule of Law Crisis

Member States...toolbox. The second measure was to set up an annual Rule of Law Review Cycle in the Member States based on a report drawn up each year by the Commission. This report would cover all the Member States and any noteworthy changes and trends concerning the rule of law, whether positive or negative. Lastly, with regard to an effective response to serious challenges to the rule of law, the Communication suggested a number of measures including (i) a strategic approach to infringement procedures and the promotion of standards developed by the Court of Justice of the European Union, (ii) support provided to the Member States to defuse risk situations or to exit rule of law related procedures, including by means of follow–up monitoring, and (iii) a debate on whether other mechanisms to protect the

Topic 10: Eurozone Crisis

in some cases marked the successful conclusion of several years... work on the part of the Commission and its departments, and in others endorsed recent initiatives adopted in response to the changing economic situation. However, referring more specifically to the discussions at the working dinner of the Heads of State or Government on 11 December, the PRESIDENT noted the tendency of the Member States, in the context of the economic crisis, to become somewhat inward–looking, prioritising their own national interests. The Member States had emphasised their determination to speed up investment projects, whether financed out of the Community budget or national budgets, but had at the same time expressed concerns regarding the time that might be taken by the Commission's decision–making procedures in

Topic 7: Eurozone Crisis

the communication efforts to reflect the spirit of good cooperation that prevailed at the informal meeting on 1 March; ... the solidarity shown by the Union and its Member States in the face of the crisis, particularly with regard to many new Member States, some of which would have to implement major economic reforms while responding to a particularly difficult economic situation, and the fact that it was only their membership of the European Union that enabled these Member States to address the challenges effectively; ... the importance of a detailed communication strategy which must be well–structured, well–argued and, in particular, realistic about the scale of the crisis, must highlight the added value of European integration and must emphasise that the Union placed its citizens at the heart of all its

Figure 11: Topic 23 Prevalence and selected text

Appendix D: Regression tables & robustness tests

Table 3: Effects of supply factors on infringement counts (no controls) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-6.557**	-6.868**	-3.757	-15.059**
	(2.425)	(2.318)	(2.835)	(4.970)
Brexit crisis	-3.294***	-3.332***	-3.341***	-4.040**
	(0.589)	(0.550)	(0.804)	(1.369)
Covid crisis	-0.324	0.316	-2.701**	-0.850
	(0.739)	(0.715)	(0.914)	(1.586)
Migration crisis	-2.205***	-2.004***	-2.304***	-4.021***
	(0.327)	(0.311)	(0.468)	(0.852)
Crimea crisis	-1.863***	-1.636***	-2.176***	-3.435***
	(0.315)	(0.292)	(0.418)	(0.606)
Eurozone crisis	-0.823**	-0.923***	-0.678*	-0.564
	(0.275)	(0.235)	(0.383)	(0.576)
Constant	4.458***	4.096***	2.969***	1.980***
	(0.057)	(0.048)	(0.083)	(0.118)
lnalpha	-1.606***	-1.870***	-1.046***	-0.066
	(0.075)	(0.087)	(0.089)	(0.083)
N	436	436	436	436
pseudo R^2	0.033	0.037	0.033	0.041

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 4: Effects of supply factors on infringement counts with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-7.183***	-7.754***	-4.494**	-12.791**
	(1.594)	(1.588)	(1.890)	(4.403)
Brexit crisis	-2.120***	-2.345***	-1.805**	-2.062
	(0.438)	(0.448)	(0.611)	(1.368)
Covid crisis	0.585	1.110**	-1.627**	-0.008
	(0.499)	(0.499)	(0.653)	(1.486)
Migration crisis	-1.838***	-1.724***	-1.774***	-3.242***
	(0.210)	(0.216)	(0.339)	(0.692)
Crimea crisis	-1.538***	-1.406***	-1.670***	-2.369***
	(0.194)	(0.190)	(0.293)	(0.448)
Eurozone crisis	-0.474**	-0.660***	-0.059	0.255
	(0.158)	(0.151)	(0.240)	(0.385)
Log of population	-1.530***	-0.932**	-3.089***	-5.651***
	(0.460)	(0.433)	(0.780)	(1.624)
Log of GDP	-0.628***	-0.542***	-0.767***	-0.805**
	(0.129)	(0.117)	(0.212)	(0.357)
Intra-EU trade	0.075***	0.047**	0.125***	0.202***
	(0.021)	(0.018)	(0.028)	(0.046)
Log of EU years	-0.046	-0.125	0.299**	0.228
	(0.115)	(0.119)	(0.094)	(0.231)
Effectiveness	-0.177	-0.216*	0.024	0.044
	(0.122)	(0.120)	(0.177)	(0.308)
Constant	45.437***	33.782***	70.562***	111.190***
	(7.280)	(6.688)	(12.009)	(23.670)
lnalpha	-2.456***	-2.639***	-2.056***	-1.367***
	(0.094)	(0.106)	(0.122)	(0.163)
N	436	436	436	436
pseudo R^2	0.112	0.108	0.132	0.178

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 5: Supply-side robustness: non-conformity with no controls 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-12.150***	-13.962***	-6.796**	-16.916**
	(2.792)	(2.680)	(3.370)	(5.752)
Brexit crisis	-3.229***	-2.754***	-3.994***	-5.748***
	(0.799)	(0.749)	(1.131)	(1.720)
Covid crisis	1.578*	2.403**	-0.036	0.356
	(0.867)	(0.840)	(1.073)	(1.847)
Migration crisis	-3.408***	-4.057***	-2.274***	-2.710**
	(0.523)	(0.559)	(0.648)	(0.908)
Crimea crisis	-1.312**	-1.451***	-0.662	-2.276***
	(0.411)	(0.379)	(0.522)	(0.649)
Eurozone crisis	-0.142	-0.393	0.530	-0.460
	(0.372)	(0.362)	(0.455)	(0.587)
Constant	3.526***	3.121***	2.016***	1.436***
	(0.077)	(0.069)	(0.103)	(0.121)
lnalpha	-1.111***	-1.272***	-0.747***	-0.205*
	(0.076)	(0.086)	(0.100)	(0.111)
N	436	436	436	436
pseudo R^2	0.038	0.047	0.028	0.040

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 6: Supply-side robustness: non-conformity with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-12.107***	-14.024***	-6.801**	-15.371***
	(1.515)	(1.760)	(2.117)	(4.493)
Brexit crisis	-2.266***	-1.774**	-2.982**	-5.866**
	(0.586)	(0.579)	(0.948)	(1.841)
Covid crisis	2.277***	3.029***	0.615	0.374
	(0.538)	(0.606)	(0.751)	(1.478)
Migration crisis	-3.222***	-4.021***	-1.723***	-2.002**
	(0.287)	(0.360)	(0.469)	(0.718)
Crimea crisis	-1.022***	-1.209***	-0.288	-1.824***
	(0.214)	(0.217)	(0.335)	(0.465)
Eurozone crisis	0.121	-0.187	0.979**	-0.287
	(0.197)	(0.219)	(0.301)	(0.410)
Log of population	-2.252**	-1.434**	-4.210***	-6.407***
	(0.711)	(0.703)	(1.164)	(1.716)
Log of GDP	-0.347**	-0.446**	-0.124	0.346
	(0.152)	(0.154)	(0.246)	(0.360)
Intra-EU trade	0.104***	0.095***	0.104**	0.115**
	(0.025)	(0.023)	(0.040)	(0.049)
Log of EU years	0.146	0.089	0.262	0.143
	(0.092)	(0.089)	(0.161)	(0.226)
Effectiveness	-0.144	-0.081	-0.162	-0.353
	(0.139)	(0.146)	(0.228)	(0.291)
Constant	47.557***	36.860**	70.999***	93.776***
	(11.561)	(11.720)	(17.755)	(24.349)
lnalpha	-2.355***	-2.447***	-1.993***	-2.534***
	(0.115)	(0.126)	(0.169)	(0.462)
N	436	436	436	436
pseudo R^2	0.155	0.154	0.140	0.206

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 7: Supply-side robustness: non-communication with no controls 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-2.978	-2.894	-1.192	-13.951*
	(2.689)	(2.737)	(3.310)	(8.107)
Brexit crisis	-3.564***	-3.772***	-3.349***	-2.353
	(0.655)	(0.643)	(0.934)	(2.066)
Covid crisis	-1.579*	-0.854	-5.575***	-2.603
	(0.829)	(0.859)	(1.164)	(2.579)
Migration crisis	-1.666***	-1.208**	-2.421***	-7.044***
	(0.367)	(0.381)	(0.534)	(1.535)
Crimea crisis	-2.247***	-1.710***	-3.720***	-6.415***
	(0.334)	(0.330)	(0.558)	(1.028)
Eurozone crisis	-1.359***	-1.261***	-1.816***	-0.842
	(0.286)	(0.273)	(0.435)	(0.735)
Constant	3.971***	3.628***	2.512***	1.171***
	(0.060)	(0.057)	(0.090)	(0.150)
lnalpha	-1.475***	-1.643***	-0.858***	0.721***
	(0.072)	(0.100)	(0.096)	(0.109)
N	436	436	436	436
pseudo R^2	0.028	0.026	0.045	0.044

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 8: Supply-side robustness: non-communication with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Rule of law crisis	-4.099**	-4.232**	-2.774	-14.023*
	(2.048)	(2.128)	(2.522)	(7.221)
Brexit crisis	-2.261***	-2.686***	-1.570**	2.038
	(0.529)	(0.547)	(0.723)	(2.027)
Covid crisis	-0.502	0.094	-4.292***	0.235
	(0.635)	(0.664)	(0.874)	(2.478)
Migration crisis	-1.216***	-0.815**	-1.861***	-6.701***
	(0.287)	(0.292)	(0.443)	(1.439)
Crimea crisis	-1.867***	-1.445***	-3.231***	-4.728***
	(0.258)	(0.262)	(0.436)	(0.997)
Eurozone crisis	-0.931***	-0.929***	-1.075***	0.954
	(0.215)	(0.211)	(0.294)	(0.610)
Log of population	-1.382**	-0.838	-2.373**	-3.501
	(0.541)	(0.546)	(0.839)	(2.178)
Log of GDP	-0.732***	-0.581***	-1.089***	-2.354***
	(0.167)	(0.155)	(0.264)	(0.567)
Intra-EU trade	0.052**	0.017	0.133***	0.370***
	(0.023)	(0.020)	(0.036)	(0.078)
Log of EU years	-0.145	-0.223	0.285**	0.302
	(0.143)	(0.149)	(0.102)	(0.338)
Effectiveness	-0.171	-0.265*	0.292	0.770
	(0.148)	(0.147)	(0.218)	(0.533)
Constant	45.869***	33.533***	66.802***	114.382***
	(8.157)	(8.063)	(12.567)	(34.248)
lnalpha	-2.037***	-2.144***	-1.727***	-0.088
	(0.082)	(0.095)	(0.124)	(0.146)
N	436	436	436	436
pseudo R^2	0.086	0.077	0.137	0.149

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Figure 12: Supply-side robustness tests
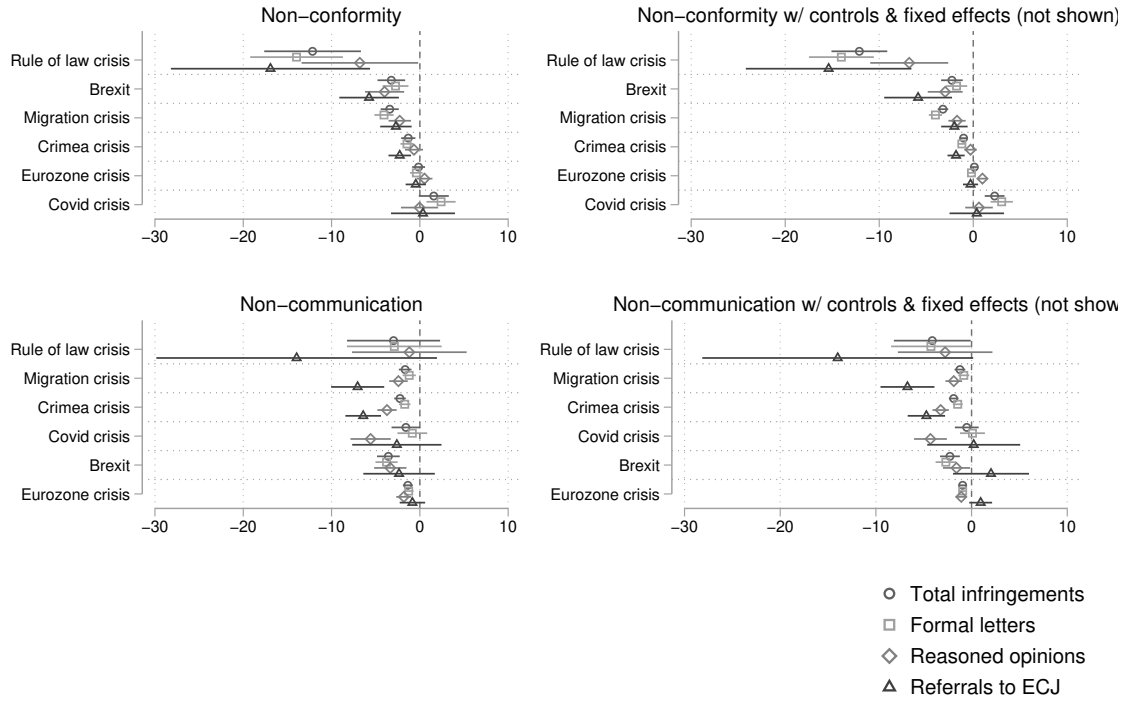
Table 9: Effects of demand factors on infringement counts (no controls) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Complaints	-0.000***	-0.000***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.090	0.078	0.057	0.417**
	(0.062)	(0.058)	(0.091)	(0.162)
EU image	-0.010	-0.012	-0.011	0.096
	(0.085)	(0.087)	(0.120)	(0.182)
Constant	4.052***	3.722***	2.915**	-1.204
	(0.668)	(0.644)	(0.976)	(1.665)
lnalpha	-1.734***	-1.966***	-1.087***	-0.224**
	(0.075)	(0.088)	(0.087)	(0.091)
N	436	436	436	436
pseudo R^2	0.046	0.047	0.037	0.062

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 10: Effects of demand factors on infringement counts with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-1.279**	-0.633	-2.805***	-4.844***
	(0.411)	(0.411)	(0.782)	(1.343)
Log of GDP	-0.266**	-0.248**	-0.422**	-0.026
	(0.111)	(0.103)	(0.190)	(0.266)
Intra-EU trade	0.046**	0.024*	0.089**	0.129***
	(0.015)	(0.014)	(0.028)	(0.035)
Log of EU years	0.071	-0.012	0.354***	0.475**
	(0.099)	(0.105)	(0.091)	(0.199)
Effectiveness	-0.126	-0.194*	0.175	0.138
	(0.110)	(0.112)	(0.176)	(0.275)
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.112**	0.103**	0.067	0.468***
	(0.049)	(0.050)	(0.078)	(0.128)
EU image	0.284***	0.280***	0.176	0.401**
	(0.083)	(0.081)	(0.126)	(0.166)
Constant	30.012***	19.450**	55.963***	72.589***
	(6.554)	(6.480)	(11.824)	(19.979)
lnalpha	-2.668***	-2.774***	-2.076***	-1.793***
	(0.089)	(0.109)	(0.115)	(0.183)
N	436	436	436	436
pseudo R^2	0.131	0.121	0.132	0.204

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 11: Demand-side robustness: non-conformity (no controls) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	-0.072	-0.252**	0.178	0.514**
	(0.084)	(0.084)	(0.113)	(0.179)
EU image	-0.060	-0.069	-0.044	0.054
	(0.124)	(0.121)	(0.160)	(0.199)
Constant	4.776***	5.914***	1.127	-2.711
	(0.932)	(0.912)	(1.248)	(1.807)
lnalpha	-1.161***	-1.365***	-0.755***	-0.206*
	(0.077)	(0.094)	(0.095)	(0.111)
N	436	436	436	436
pseudo R^2	0.043	0.056	0.029	0.041

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 12: Demand-side robustness: non-conformity with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-2.261***	-1.464**	-3.965***	-5.959***
	(0.614)	(0.610)	(1.050)	(1.639)
Log of GDP	0.364**	0.337**	0.431**	0.374
	(0.125)	(0.128)	(0.207)	(0.292)
Intra-EU trade	0.046**	0.034*	0.051	0.088**
	(0.021)	(0.019)	(0.037)	(0.041)
Log of EU years	0.239**	0.189**	0.330**	0.236
	(0.082)	(0.077)	(0.153)	(0.228)
Effectiveness	-0.017	0.047	-0.031	-0.270
	(0.129)	(0.131)	(0.218)	(0.271)
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	-0.057	-0.254***	0.245**	0.637***
	(0.055)	(0.058)	(0.099)	(0.141)
EU image	0.158*	0.080	0.196	0.616***
	(0.089)	(0.093)	(0.153)	(0.161)
Constant	29.131**	18.751*	50.053**	78.590***
	(10.134)	(10.229)	(15.883)	(23.081)
lnalpha	-2.565***	-2.852***	-1.980***	-2.541***
	(0.126)	(0.190)	(0.174)	(0.398)
N	436	436	436	436
pseudo R^2	0.168	0.175	0.136	0.207

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 13: Demand-side robustness: non-communication (no controls) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Complaints	-0.000***	-0.000***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.198**	0.268***	-0.046	0.230
	(0.073)	(0.073)	(0.112)	(0.246)
EU image	0.018	0.010	0.020	0.333
	(0.100)	(0.116)	(0.141)	(0.281)
Constant	2.462**	1.460*	3.136**	-0.887
	(0.780)	(0.826)	(1.179)	(2.555)
lnalpha	-1.535***	-1.660***	-0.786***	0.401**
	(0.073)	(0.095)	(0.090)	(0.131)
N	436	436	436	436
pseudo R^2	0.035	0.029	0.034	0.083

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 14: Demand-side robustness: non-communication with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-0.883*	-0.323	-2.145**	-1.414
	(0.514)	(0.523)	(0.950)	(2.017)
Log of GDP	-0.636***	-0.585***	-0.934***	-0.627
	(0.143)	(0.132)	(0.250)	(0.426)
Intra-EU trade	0.044**	0.017	0.113**	0.225***
	(0.018)	(0.016)	(0.038)	(0.067)
Log of EU years	-0.021	-0.112	0.333**	0.792**
	(0.127)	(0.133)	(0.105)	(0.255)
Effectiveness	-0.171	-0.315**	0.416*	1.020**
	(0.141)	(0.144)	(0.234)	(0.486)
Complaints	-0.000***	-0.000***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.227***	0.303***	-0.047	0.179
	(0.068)	(0.069)	(0.103)	(0.222)
EU image	0.356***	0.369***	0.160	0.025
	(0.108)	(0.108)	(0.154)	(0.282)
Constant	32.158***	21.537**	59.006***	33.864
	(7.941)	(8.042)	(14.240)	(29.979)
lnalpha	-2.094***	-2.153***	-1.557***	-0.506**
	(0.088)	(0.097)	(0.122)	(0.196)
N	436	436	436	436
pseudo R^2	0.092	0.080	0.115	0.185

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 15: Demand-side robustness: effects of demand factors (non-logged questions) on infringement counts with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-1.294**	-0.648	-2.814***	-4.932***
	(0.410)	(0.410)	(0.782)	(1.343)
Log of GDP	-0.257**	-0.241**	-0.411**	0.051
	(0.112)	(0.104)	(0.191)	(0.263)
Intra-EU trade	0.046**	0.024*	0.088**	0.125***
	(0.015)	(0.014)	(0.028)	(0.035)
Log of EU years	0.069	-0.015	0.355***	0.468**
	(0.099)	(0.105)	(0.091)	(0.198)
Effectiveness	-0.124	-0.190*	0.171	0.142
	(0.110)	(0.112)	(0.177)	(0.275)
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
All EP questions	0.000**	0.000*	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
EU image	0.269***	0.263***	0.176	0.351**
	(0.081)	(0.079)	(0.124)	(0.162)
Constant	30.963***	20.386**	56.372***	75.882***
	(6.502)	(6.424)	(11.844)	(19.922)
lnalpha	-2.665***	-2.770***	-2.077***	-1.788***
	(0.088)	(0.109)	(0.115)	(0.185)
N	436	436	436	436
pseudo R^2	0.131	0.120	0.132	0.203

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 16: Effects of supply & demand factors on infringement counts (no controls) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
All crises	-1.168***	-1.028***	-1.502***	-1.944***
	(0.186)	(0.176)	(0.284)	(0.421)
Complaints	-0.000***	-0.000***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.242***	0.207**	0.281**	0.701***
	(0.066)	(0.065)	(0.097)	(0.168)
EU image	-0.051	-0.049	-0.055	0.011
	(0.080)	(0.082)	(0.116)	(0.177)
Constant	3.015***	2.854***	1.314	-3.154*
	(0.677)	(0.671)	(1.012)	(1.680)
lnalpha	-1.823***	-2.060***	-1.159***	-0.284**
	(0.074)	(0.089)	(0.086)	(0.091)
N	436	436	436	436
pseudo R^2	0.055	0.056	0.045	0.070

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 17: Effects of supply & demand factors on infringement counts with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-1.127**	-0.493	-2.600***	-4.208**
	(0.420)	(0.440)	(0.746)	(1.346)
Log of GDP	0.002	-0.002	-0.118	0.390
	(0.109)	(0.102)	(0.191)	(0.263)
Intra-EU trade	0.031**	0.010	0.073**	0.109**
	(0.016)	(0.015)	(0.028)	(0.034)
Log of EU years	0.137	0.046	0.429***	0.595**
	(0.094)	(0.102)	(0.089)	(0.187)
Effectiveness	-0.171	-0.237**	0.125	0.091
	(0.106)	(0.111)	(0.170)	(0.262)
All crises	-1.109***	-1.026***	-1.232***	-1.703***
	(0.122)	(0.128)	(0.212)	(0.302)
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Parliament questions	0.276***	0.252***	0.266**	0.729***
	(0.049)	(0.053)	(0.082)	(0.134)
EU image	0.212**	0.212**	0.104	0.263*
	(0.080)	(0.081)	(0.120)	(0.159)
Constant	19.401**	9.731	43.253***	49.638**
	(6.637)	(6.789)	(11.484)	(20.508)
lnalpha	-2.866***	-2.975***	-2.201***	-2.067***
	(0.097)	(0.121)	(0.123)	(0.226)
N	436	436	436	436
pseudo R^2	0.146	0.135	0.142	0.215

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$

Table 18: Effects of supply & demand factors (non-transformed EP questions) on infringement counts with controls & fixed effects (not shown) 2005-2020

	Total infringements	Formal letters	Reasoned opinions	Referrals to ECJ
Log of population	-1.176**	-0.539	-2.645***	-4.413**
	(0.415)	(0.433)	(0.742)	(1.342)
Log of GDP	0.002	-0.002	-0.106	0.468*
	(0.109)	(0.103)	(0.192)	(0.264)
Intra-EU trade	0.031*	0.010	0.072**	0.105**
	(0.016)	(0.015)	(0.028)	(0.034)
Log of EU years	0.126	0.035	0.422***	0.569**
	(0.095)	(0.103)	(0.089)	(0.188)
Effectiveness	-0.159	-0.225**	0.131	0.103
	(0.106)	(0.112)	(0.170)	(0.262)
All crises	-1.028***	-0.950***	-1.166***	-1.537***
	(0.118)	(0.123)	(0.206)	(0.297)
Complaints	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
All EP questions	0.000***	0.000***	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
EU image	0.177**	0.179**	0.078	0.197
	(0.080)	(0.080)	(0.118)	(0.157)
Constant	22.511***	12.619*	45.889***	56.979**
	(6.500)	(6.654)	(11.373)	(20.298)
lnalpha	-2.842***	-2.948***	-2.195***	-2.032***
	(0.096)	(0.119)	(0.122)	(0.228)
N	436	436	436	436
pseudo R^2	0.144	0.133	0.142	0.213

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$