The Political Consequences of Economic Shocks - Evidence fom Poland

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Evidence from Poland

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How do economic shocks influence domestic politics? We take advantage of a surprise revaluation of the Swiss franc in early 2015 to identify the Polish citizens with clear and direct economic exposure: those repaying mortgages denominated in Swiss francs. Using original survey data collected just prior to the 2015 Polish parliamentary elections and comparing current with past foreign exchange borrowers, we show that individuals directly exposed to the shock were much more likely to demand government support. Those with no exposure to the shock were less likely to express an opinion on the matter. Current borrowers' preferences for a generous resolution scheme translated into distinct voting behavior. Among former government voters, Swiss franc borrowers were more likely to desert the government and vote for the largest opposition party, the PiS, which had promised the most generous bailout plan. The evidence suggests that the PiS was able to use the franc shock to expand its electoral coalition beyond its core voters to include those directly affected by the franc shock, a subgroup otherwise unlikely to support the PiS. Simulation results indicate that, absent the franc shock, the PiS is unlikely to have won a parliamentary majority.

How do external economic shocks affect domestic politics? For whom do they become politically salient? To what extent do voters' preferences over policy responses to such shocks reflect economic interests and non-material factors? Do these preferences translate into voting behavior in national elections? Can parties use these shocks to attract additional voters by advocating for policy responses that materially help those particularly affected by such shocks? In the wake of a decade of financial crises, when international economic integration has become an increasingly contested issue in Western democracies, answering these questions is critically important. Finding answers, however, is complicated because economic shocks are frequently endogenous to government policy and often have both immediate and more indirect consequences. Effects on specific households may push in different directions, making it difficult to unambiguously identify who is most affected. Moreover, in forming their opinions, voters are also exposed to both government policy responses and narratives about their costs and impact.

We circumvent these problems by exploiting a unique situation in the October 2015 Polish elections. Earlier in the year, the Swiss National Bank (SNB) had—in a surprise move—allowed the Swiss franc (CHF) to appreciate substantially. Since Switzerland is not a major trading or investment partner for Poland, the franc appreciation had little impact on the broader Polish economy. Nevertheless, it had serious consequences for a well-defined group of voters: Polish homeowners who held CHF-denominated mortgages and therefore faced soaring repayment costs after the franc revaluation. The surprise nature and large magnitude of the shock, combined with uncertainty about the government's response, imply that CHF borrowers in Poland were unable to hedge their debt exposure or unwind it prior to the October parliamentary election. Unlike many cases in which it is difficult to measure actors' economic interests, Poland's experience thus enables us to clearly identify which voters were directly and materially affected by the CHF shock. Thus, this episode is a rare case of a country hit by an exogenous, external financial shock for which the government is not

responsible, with economic consequences channeled through one specific pathway affecting a clearly defined subset of voters.

The Polish experience is particularly interesting from a political perspective because the question of how best to respond to the CHF shock—and whether affected homeowners should receive government financial support—became a campaign issue in the 2015 Polish elections. The populist-right "Law and Justice" Party (PiS), in particular, seized on the issue and promised to implement a generous conversion scheme for homeowners with CHF mortgages at the expense of largely foreign-owned banks. The election brought the PiS to power with 38% of the vote, but a narrow absolute majority of 235 of the 460 parliamentary seats. These elections have proven to be a turning point in Polish politics because the PiS has since used its majority to challenge the foundations of Poland's liberal democratic order (Markowski 2016; Nalepa 2016). Our study thus describes voting behavior in a substantively important election with implications for both the future of Polish democracy and the European Union as a whole (Kelemen 2017).

In this paper, we seek to answer three central research questions about the Swiss franc shock's political impact in Poland. First, did individuals with foreign currency mortgages have different policy preferences than those without direct exposure? Using original survey data collected immediately before the October 2015 parliamentary elections, we find that the small group of respondents repaying foreign currency-denominated debt had strong and distinct policy preferences in line with their material economic interests. Not only were they more likely to favor intervention by the government in support of borrowers, they were also much more likely to have distinct opinion about specific policy proposals on this issue, with a strong preference for the most generous proposal put forward by the PiS. Those without any exposure to foreign currency borrowing were less likely to express an opinion.

Second, what were the political consequences of the shock? Given that partisan strategies of responding to the CHF appreciation shock differed considerably, we examine

whether these differences had material consequences for the election. Our analyses of voting behavior suggest that the populist-right PiS benefitted from the CHF mortgage problem in the 2015 parliamentary elections. Compared to voters without any exposure to foreign currency borrowing, CHF-borrowers that had previously voted for the incumbent PO/PSL coalition were more likely to shift their support to the PiS. This evidence suggests that, by targeting material policy promises to the subgroup of exposed voters who formerly typically supported the incumbent coalition, the PiS was able to expand its electoral coalition. Indeed, our analysis implies that the PiS absorbed nearly all the PO/PSL defectors among those with a direct stake in the CHF shock. Promising help to those hurt by an international shock dovetailed neatly with the PiS' Euroskeptic, anti-foreigner, nationalist platform, enabling it to retain the support of its core voters.

Third, how did voters form policy preferences about this issue during the Polish election campaign? Using an embedded survey experiment, we find mixed but suggestive evidence that voters with no exposure to foreign currency debt become more likely to support public intervention when provided with information about the issue. This finding reinforces the conclusion that the PiS' more generous bailout proposal appealed to a small group of affected voters without turning away its core voters and thus helped the PiS to broaden its electoral appeal enough to win an absolute majority of seats.

Overall, the Polish case represents an example of how political parties—in this case insurgent populists—can ascend to power in the wake of economic shocks by attracting marginal voters who are unlikely supporters otherwise.

1. External Shocks and Domestic Politics

External economic shocks raise three key domestic political questions: How do shocks influence voters' policy preferences? How do such shocks affect voting behavior? How and to what extent do political parties exploit such shocks to their electoral advantage?

The conventional political economy assumption is that voters' material economic self-interest induces preferences over policy responses (Frieden 1991). Those individuals negatively affected prefer policies that shield them from these consequences, while those who benefit or are not affected by the shock tend to be opposed to government intervention for which they, as taxpayers, would be on the hook (e.g., Fernández-Albertos and Kuo 2016; Margalit 2011; Walter 2017). A wave of recent research, however, have questioned the importance of objective economic risks for voter preferences. When asked in surveys, voters' opinions over trade, monetary, and financial policies are often weakly held and correlate with ideological attitudes or partisan commitments at least as strongly as with purported material self-interest (e.g., Ahlquist, Clayton, and Levi 2014; Bechtel, Hainmueller, and Margalit 2014; Mansfield and Mutz 2009; Margalit 2012; Nelson and Steinberg 2018).

Specifying voters' economic interests is not always straightforward. Exchange rate shocks, for example, can propagate through multiple channels, such as the relative prices of imports, the competitiveness of exporters, and domestic price levels more generally. Exchange rate shocks also affect those who have taken on debts denominated in foreign currency and those who hold foreign currency assets (Broz and Ansell 2014; Frieden 2015; Walter 2013, 2016). Identifying the net effect of these effects is difficult, complicates efforts to clearly discriminate between those directly and materially hurt from those who are in a difficult economic position for other reasons. In addition to these conceptual problems, the effects of economic shocks are often imperfectly measured. Even more sophisticated recent research only uses proxies to measure individuals' exposure to the international economy, such as information on workers' community and local labor markets, voters' industry or job characteristics, or self-perceived vulnerability.

Moreover, material factors tend to be less important when voters are poorly-informed, or when the effects of the shock are diffuse, opaque, and complex, as is often the case with

exchange rate related issues (Gowa 1988). In such contexts, opinions are particularly malleable to information or other priming effects, especially among those voters who were previously uninformed about economic issues. For example, past research has shown that policy-specific information can have a strong impact on individual political judgments (Gilens 2001; Kendall, Nannicini, and Trebbi 2014), particularly when it clarifies the consequences of a shock for respondents' own pocketbooks (Bearce and Tuxhorn 2015; Rho and Tomz 2017) or its adverse effects on a domestic population (Lü, Scheve, and Slaughter 2012). Information on whether a shock originated abroad, what its consequences are, who is being hurt or helped by the shock, and how others have responded to similar shocks may thus influence voters' preferences about possible policy responses.

Immediate material interest should therefore predict policy preferences most strongly among those directly and clearly affected by an economic shock. These people will be more likely to express opinions and choose among competing proposals in line with their material interest. In contrast, among those who are not (or are indirectly) affected by such a shock, opinions will be more weakly held, more connected to non-material factors, and more susceptible to change when respondents are confronted with information.

External economic shocks and voting behavior

Even if external economic shocks shape voters' policy preferences, do they affect voting behavior? Some authors are skeptical and argue that voters are unlikely to punish politicians for economic developments beyond their control (Healy and Malhotra 2010; Hellwig 2014; Powell and Whitten 1993). Nonetheless, a considerable body of work suggests that exposure to the international economy is, in fact, related to voting behavior (Mughan, Bean, and McAllister 2003; Rommel and Walter 2018) and voting outcomes (Autor et al. 2016; Dippel, Gold, and Heblich 2015; Jensen, Quinn, and Weymouth 2017; Margalit 2011). While many of these studies document a correlation between exposure and voting, the mechanism that links

these two often remains unclear. Moreover, non-material concerns about globalization may trump material motivations, especially when it comes to the populist right (for a review, see Bornschier 2017).

Given that not all voters are equally exposed to economic shocks, we can distinguish two types of voter responses. First, those with a clear and immediate material stake in the potential government response to an economic shock are likely to react instrumentally (Bélanger and Meguid 2008; Singer 2011). Offered a sufficiently large benefit, these voters may even be willing to switch their vote to a party they otherwise might not support. In other words, strong material interests may trump partisan attachment or ideology when the need is strong or the promised benefits large. Second, among those not directly implicated, we expect non-material concerns to far outweigh the effects of any promised policy response in their voting behavior.

Party strategies and external economic shocks

This distinction between voters with and without direct material exposure to an external shock creates incentives for political parties to strategically promise policies that benefit the group of directly exposed voters (e.g., Akhmedov and Zhuravskaya 2004; Cole 2009). However, for a political party intent on maximizing its vote share, offering targeted bailouts also carries risks. By promising targeted benefits—such as protectionist policies for particular industries, subsidies for a specific firm, or policies aimed at supporting those directly hurt by a financial shock—the party risks alienating those voters who might be called upon to finance the bailout (Somer-Topcu 2015).

Maintaining this balancing act between attracting new voters with targeted benefits and driving core voters away is easier for some political parties than for others. Parties in the opposition, for example, can promise generous benefits without having to deliver on them prior to the election, whereas governing parties face the immediate reaction of international

markets and foreign governments. Parties also differ in the "ideological costs" they incur by targeted promises to voters exposed to the shock. These costs will be higher when such promises conflict with the core ideology of the typical party supporters, activists, and donors, but lower when they chime with the party's general ideological stance. When it comes to internationally-based economic shocks, nationalist parties tend to be in a particularly favorable position. In most countries populist-nationalist parties are in opposition and their platforms emphasize the rejection of foreign agents and skepticism toward international cooperation and economic integration (Halikiopoulou, Nanou, and Vasilopoulou 2012; Mudde 2007). It is cheaper for them to attract new voters with promises of material support because these promises are also valuable to the party's core voters for ideological reasons. It is not surprising that populist-right challengers in recent campaigns have made targeted promises to protect specific groups from the global economy. Examples include Donald Trump's promises to Carrier workers to protect their jobs from being offshored to Mexico and Marine Le Pen's election promise that public procurement should be open only to French firms.

We therefore expect that opposition parties and candidates – especially those with a nationalist profile – will more effectively exploit external economic shocks for political gain, using shocks as focal events to appeal to both their core supporters and the groups negatively affected by the shock at the same time.

2. Poland and the 2015 Swiss franc revaluation

In order to empirically examine how economic shocks influence domestic politics, we take advantage of a rare situation: an exogenous external shock affecting a clearly defined subset of voters in an election year. On 15 January 2015, the Swiss National Bank (SNB) suspended its exchange rate floor of 1.20 CHF/Euro. This one-sided exchange rate peg, introduced in 2011 to counter upward pressure on the franc in the context of the Eurozone crisis, led to the SNB's substantially increased Euro holdings. The bank faced rising domestic

political pressure to abandon the peg and shrink its balance sheet. Faced with the possibility of new bout of upward pressure on the franc as the European Central Bank prepared to engage in quantitative easing, SNB authorities decided to abandon the exchange rate floor and let the Swiss franc appreciate, doing so only days after publicly declaring the that CHF/Euro peg was "absolutely central."[2]

The SNB announcement caught financial market participants and policymakers in Switzerland and abroad completely by surprise.[3] In the first hours after the decision, the exchange rate became so volatile that Swiss banks temporarily stopped converting Swiss francs into Euros. Swiss exporters reacted with dismay, with one CEO calling the decision a "tsunami."[4] Several major foreign exchange (FX) brokers incurred such losses that they went bankrupt. Other financial institutions, such as Citigroup and Deutsche Bank, incurred losses of roughly \$150 million each.[5]

Following the SNB decision, the Swiss franc soared against the Euro and currencies pegged to it, including the Polish zloty. The franc initially gained nearly 25% in value and then stabilized at an approximately 13% higher exchange rate than before. Figure 1 shows the size of the revaluation shock by displaying the Swiss franc exchange rates with both the Euro and the Polish zloty. The exchange rate shock had a strong and persistent effect on both the Euro-CHF and the zloty-CHF exchange rate.

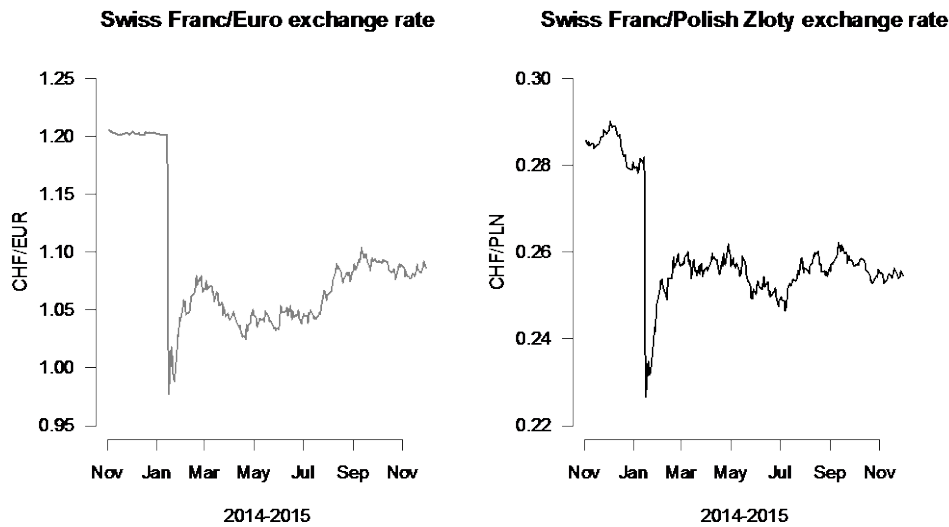[2] For a discussion, see http://www.economist.com/blogs/economist-explains/2015/01/economist-explains-13
[3] For example, the SNB informed the Swiss government about 1-2 hours in advance, and did not give other international monetary institutions any advance warning.
[4] http://www.reuters.com/article/snb-swatch-idUSFWN0UU03L20150115.
[5] https://www.wsj.com/articles/swiss-franc-move-cripples-currency-brokers-1421371654.

Figure 1: The foreign exchange shock

Although the SNB's decision to abandon the CHF peg was driven by domestic concerns, it had significant consequences beyond Switzerland's borders, particularly in Eastern Europe, where CHF-denominated borrowing was widespread (Fischer and Yesin 2017). In Poland there were roughly 575,000 households (about 4%) currently repaying CHF-denominated loans, predominantly mortgages, at the time of the revaluation.[6] Foreign currency denominated mortgages had been the dominant mortgage type in Poland for over ten years (Krogstrup and Tille 2015).[7] Of these mortgages, the vast majority—more than 97% in 2008 and about 80% in 2012—were held in Swiss francs (Michał Buszko 2016). In 2015, Swiss franc loans amounted to about 8% of GDP in Poland,[8] including $38 billion worth of home mortgages denominated in Swiss francs.[9]

How severely an external economic shock affects a country tends to depend on the current state of the national economy and how policymakers respond (Reinhart and Rogoff

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[6] https://www.bloomberg.com/news/articles/2015-01-20/poland-seeks-measures-to-help-swiss-franc-mortgage-loan-holders

[7] For details on when and why FX loans became widespread see (Buszko 2016; Buszko and Krupa 2015). On borrowers' knowledge of the risks, see Beckman and Stix (2015).

[8] http://bruegel.org/2015/10/foreign-loan-hangovers-and-macro-prudential-measures-in-central-eastern-Europe/

[9] http://www.bloomberg.com/news/articles/2015-09-10/polish-bill-on-swiss-franc-loans-stalls-prolongs-risk-for-banks

2009). These circumstances were rather favorable for Poland in 2015: At the time of the CHF revaluation, Polish public debt and deficit levels were modest and Poland had enjoyed a period of extended economic growth, outperforming the Eurozone. In addition, the real economy consequences of the CHF shock for Poland were small. In 2013, exports from Poland to Switzerland only accounted for 1% of all Polish exports, while only 0.9% of the country's imports and less than 4% of all inward foreign direct investment into Poland came from Switzerland.[10] Consequently, the effect of the exchange rate change on Polish trade and the Polish economy more generally, including on individuals' purchasing power, was minimal. Not only was the CHF shock unrelated to any economic or political developments in Poland, [11] but the country was also in a good position to absorb any fallout.

The immediate consequences of the exchange rate shock were largely restricted to one channel – Swiss franc-denominated loans – and only materially affected the *Frankowiczow*, the 4% of Polish households with CHF-denominated debts. The surprise nature of the shock implies that Polish borrowers were taken off guard. The sudden increase in debt and interest repayments combined with the political uncertainty around the government's response and the pending election meant that borrowers were unable to unwind their CHF exposure between the January shock and the October election. For the purposes of our study, these borrowers were stuck. While CHF borrowing was certainly not randomly assigned in the population, the CHF shock in Poland is uniquely useful because its surprise nature allows us to clearly identify the shock's "victims" more precisely than previous studies—especially those looking at exchange rates—have been able to do.

Political reactions

Initial political reactions to the CHF revaluation shock in Poland were limited. There were scattered protests by homeowners. Some government officials floated the possibility that

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[10] http://atlas.media.mit.edu/en/profile/country/pol/#Destinations
[11] Save the governments' decision to allow citizens to borrow in a foreign currency, something that had been curtailed since 2011.

there may emerge modest support for borrowers.[12] The issue gained momentum, however, when the PiS presidential candidate, Andrzej Duda, advocated for the conversion of Swiss franc loans into Polish zlotys at a preferential exchange rate during the May 2015 presidential election campaign. Duda's unexpected election success then transformed potential policy responses to the CHF shock into a broader issue in Polish domestic politics.

The issue gained further visibility when the parliamentary election campaign heated up in the second half of 2015. The senior party in the incumbent coalition, Civic Platform (PO), took up the issue in August 2015, when it introduced a bill that offered CHF borrowers in smaller homes the opportunity to convert their Swiss franc mortgages into zloty-denominated loans at a preferred exchange rate. The exchange rate proposed in the bill implied that the costs of this program would be shared equally between borrowers and lenders (mostly subsidiaries of German, Austrian, and Italian banks). The main opposition parties, the PiS and Democratic Left Alliance, subsequently pushed for a more generous conversion scheme and, in a surprise move, banded together with the junior government coalition member, the Polish People's Party (PSL), to pass an amended bill in parliament. The amended bill broadened eligibility for loan conversion and significantly increased the cost for banks. Rather splitting costs between banks and borrowers 50-50, this new bill proposed a 90-10 split, in favor of borrowers.[13] After extraordinary pressure from the financial sector, however, the upper house changed the bill back to its original 50-50 version in early September 2015 and passed it back to the lower house. No final decision was taken before the election.[14]

Although foreign currency borrowers are a relatively small part of the electorate, the question of how to respond to this external shock had turned into a campaign issue by August

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[12] http://www.thenews.pl/1/9/Artykul/194740,Franc-mortgage-holders-walk-around-Poland
[13] http://economictimes.indiatimes.com/articleshow/48511524.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
[14] http://www.allenovery.com/publications/en-gb/European-finance-litigation-review/central-Europe/Pages/Polish-banks-face-huge-losses-under-proposed-FX-loan-legislation.aspx

2015. The political parties offered policies that varied in their generosity towards the *Frankowiczow*: While the liberal Nowoscenza party did not see any need for government intervention on behalf of CHF borrowers, the incumbent PO took an intermediate stance and PiS offered a very generous package.[15]

In the 25 October 2015 elections, the incumbent PO lost 69 seats and garnered only 24% of the vote.[16] The PiS came to power with 38% of the popular vote, but secured an absolute majority of 235 of the 460 parliamentary seats. The PiS has subsequently used its position to shift Polish politics sharply to the right, challenging the democratic foundations of the state (Kelemen 2017). As such, the elections represented a watershed moment in post-Cold War Polish politics.

3. Research Design

To examine the political consequences of the CHF revaluation shock on Polish electoral politics, we use original survey data that contains information on individuals' exposure to CHF-denominated debt. We commissioned CBOS, a Warsaw-based polling firm, to field an original survey with an embedded experiment during 7-21 October 2015, immediately before the 25 October elections. This survey was collected through computer-assisted personal interviews with 2,044 respondents identified as a random sample of adult Polish citizens (age 18+) drawn by the Ministry of Administration from the database of national identification numbers. The survey estimates of vote shares closely mirrored the actual results of the election: in the survey sample, 26.3% of respondents intended to vote for the PO, while 36.5% intended to vote for the PiS; in the actual election, the results were 24.1% and 37.6%, respectively.

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[15] The PiS more generally made a number of costly pledges to clearly specified groups, mostly on social policy (Markowski 2016; Szczerbiak 2016).
[16] For more information on these elections, see Marcinkiewicz and Stegmaier (2016).

Dependent variables: policy preferences and vote intentions

We use three different dependent variables to elicit respondents' policy preferences and vote intentions. The first dependent variable is a general question about whether the government should intervene to support Polish CHF borrowers. The English translation of the question and possible responses is:

> "How much should the government intervene to help Polish borrowers with Swiss franc loans? Keep in mind that an intervention would require hurting banks or using tax dollars."
> Answer categories: "Big intervention", "some intervention", "do not intervene", and "not sure/don't know".

We then exploit the fact that there were two distinct policy responses debated in Parliament during the election campaigns and ask about respondent's specific policy preferences:

> "The Polish parliament has recently debated two policy proposals on how to help households that took out home loans in Swiss francs. Both proposals would convert the Swiss franc mortgages into zlotys at an exchange rate that makes the loans more affordable. Both proposals limit the assistance to households living in apartments and houses no larger than 100-150 square meters. Both programs are expected to cost around 10 billion zlotys. One proposal ("Proposal A") splits these costs equally between the banks issuing the loans and the households who borrowed the money. The other proposal ("Proposal B") forces the banks to pay 90% of these costs and mortgage borrowers pay 10%. Which of the following do you support?"
> Answer categories: "Proposal A, where the cost is equally split between banks and borrowers", "Proposal B, where banks pay 90% and borrowers 10% of the costs", "The government should do nothing, meaning the mortgage borrowers bear all the costs.", "The government should something but I do not support either Proposal A or Proposal B" and "Don't know."

Although Proposal A emerged from the government and Proposal B emerged from the opposition, we are careful in the prompt and question to avoid associating any proposal with a particular party or politician. Finally, we recorded respondents' stated intention to participate in the upcoming parliamentary election and if so, which party list they planned to vote for in the lower house, the *Sejm*.

Independent variables: Foreign exchange exposure

An important component of our survey's novelty is the inclusion of questions asking

respondents about their own foreign exchange borrowing. To identify exposure to foreign currency mortgages, we create three mutually exclusive categories based on survey respondents' self-reported status. The first category is *current FX borrower*: individuals who report having a bank loan denominated in a foreign currency currently in repayment. This is a relatively small group, comprising only 3.4% of our sample, of which nearly all (86%) had Swiss franc-denominated loans (with the rest in Euros), a size that is consistent with external estimates that roughly four percent of Polish households (~565,000) had Swiss franc debts in 2015. We expect that this group should have clear policy preferences in line with their material interest (more intervention) and may be tempted to vote for the party that makes the most generous offer to them (in this case, the PiS).

Not everyone is able to borrow in foreign currency, and debt contracts and foreign currency movements are complicated topics about which many individuals may not choose to invest the effort to learn. Any observed differences between those having foreign currency debts and those who do not may thus simply be an artifact of other underlying characteristics or knowledge differences. To partially address this possibility, we identify a second category: *past FX borrower*. These are individuals who claim to have taken out a foreign currency loan from a bank in the past but are no longer in repayment. This group represents respondents who share many characteristics with the *current FX borrowers*, including a willingness to take out an FX loan (see table 1). They are plausibly better informed about debt and foreign currency than those who have never had an FX loan, but this group is not directly exposed at the time of the election. We therefore view this group as an important and plausible comparison set for *current FX borrowers*. *Past FX borrowers* comprise 2.6% of our sample.[17]

Individuals' social networks and personal connections may also influence how citizens think about international economic events and policy (Ahlquist, Clayton, and Levi 2014). We

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[17] See the supplemental materials for a description of the predictors of having an FX loan.

therefore identify a third group of respondents, *knows FX borrower*. These respondents—34% of our sample—claim to personally know someone who has taken out a foreign currency loan, but have never done so themselves. We interpret respondents in this group as representing those who are aware of the *Frankowiczow* problem but do not have personal experience with foreign currency debts.

Based on these three categories of exposure it follows that the large majority of respondents (60%) neither had nor claim to know someone with a loan in foreign currency. We will refer to these as the "unexposed" and use them as our reference category throughout.

Other covariates

In several of the models below, we condition on a range of demographic factors included in CBOS' standard monthly survey of eligible Polish voters. We are careful to include only those covariates that are plausibly "pre-exposure," in that their value is unaffected by or likely determined prior to the January 2015 franc shock. These variables include age, gender, income quintile, education level, whether the respondent is in paid work, marital status, religiosity, whether the respondent lives in an urban area, province, household size, respondents' self-placement on a left-right political scale, and respondents' reported voting behavior (turnout and party list choice) in the previous (2011) parliamentary elections. We divide age into quintiles, since borrowing and home-buying typically takes place at middle age ranges; 32-44 is the reference category in all analyses. The left-right political scale is strongly tri-modal, so we construct dummies for Left, Right, and Center, with Center as the reference category.

Analysis

Our analysis proceeds in four steps. We examine, first, whether Swiss franc borrowers

evaluated the policy proposals differently from others and second, whether CHF borrowers voted differently. These analyses begin with basic response distributions by FX exposure and then revisit these findings in a regression framework. Third, based on the voter behavior estimates, we provide some simple calculations describing how the election might have turned out in the absence of the Swiss franc shock. In a final step, we use an embedded experiment that provides respondents with different pieces of information to explore how Poles formed their opinions. The experiment is described in more detail below.

All of the regression results use CBOS-generated survey weights to the Polish population. Because of small samples among the current and former FX borrower categories we are especially sensitive about exploiting all the data, in addition to avoiding any bias induced by missing values. We therefore multiply impute missing values.[18] Results in regression tables represent estimates combined across twenty imputed datasets.

4. Exposure to exchange rate risk and policy preferences

Material interest-based explanations suggest that individuals currently repaying CHF-denominated debt should have clear preference for government intervention and shifting the adjustment burden on to lenders. Figure 2 displays the proportion of respondents supporting different degrees of government intervention across our four different FX loan exposure categories, with associated 95% confidence intervals. Two notable findings emerge. First, "No intervention" is the clear modal response among all groups *except* the *current FX borrowers*. Notwithstanding the small sample and large confidence intervals, *current FX borrowers are far more supportive of government intervention than any of the other groups*. The "big intervention" and "some intervention" responses are statistically indistinguishable from each other in this group. Importantly, respondents who used to—but no longer—have an FX loan are the most skeptical with regard to intervention (although confidence intervals are

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[18] We create twenty complete datasets using Amelia II (Honaker, King, and Blackwell 2011). Over-imputation diagnostics indicate that the imputation model performed adequately. Code and details are available in the replication archive.

wide). *Second, those with some exposure to foreign exchange debt are better informed than those with no exposure*, as indicated by the fact that they are very unlikely to answer "don't know." The current and past FX borrowers reported "don't know" as very low rates, while about 15% of the unexposed failed to report an opinion.

Figure 2: Distribution of preferences for government intervention by exposure to foreign currency debt. Horizontal bars are 95% confidence intervals
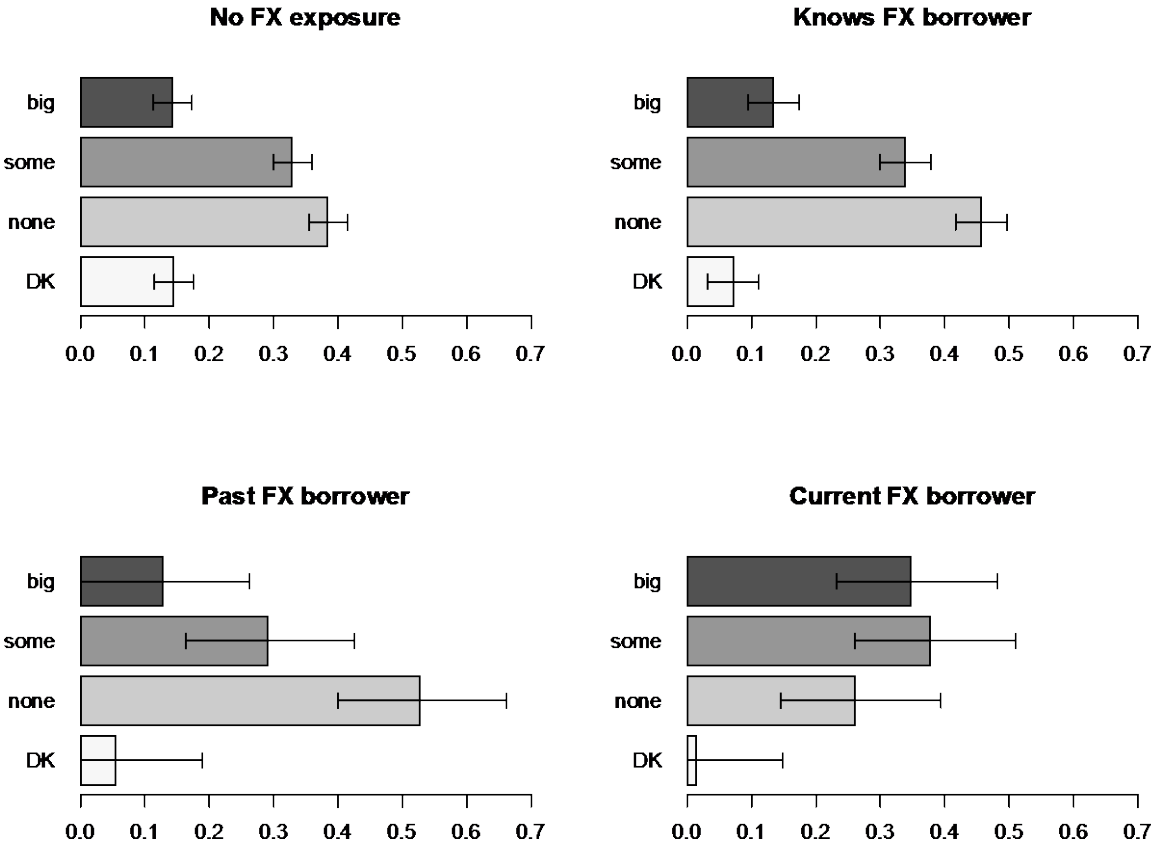
A similar picture emerges when we shift our focus to respondents' preferences over concrete policy proposals that became the focus of public debate in the months preceding the Polish general election in October 2015. Figure 3 displays the response distribution for the question about concrete policy proposals across different levels of exposure to FX borrowing. *Consistent with their immediate material interests, those currently paying back an FX loan display a clear preference for the policy that is most generous to borrowers. Fully 80% of current borrowers want the government to do something.* In contrast, "do nothing" is again

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the modal response for all the other groups. Consistent with the notion that many Poles were uniformed about the franc revaluation shock the proportion of respondents failing to express an opinion about the policy proposals is far higher among those with no exposure to FX borrowing than in the other three groups.

Figure 3: Support for different policy options as a function of exposure to foreign currency debt
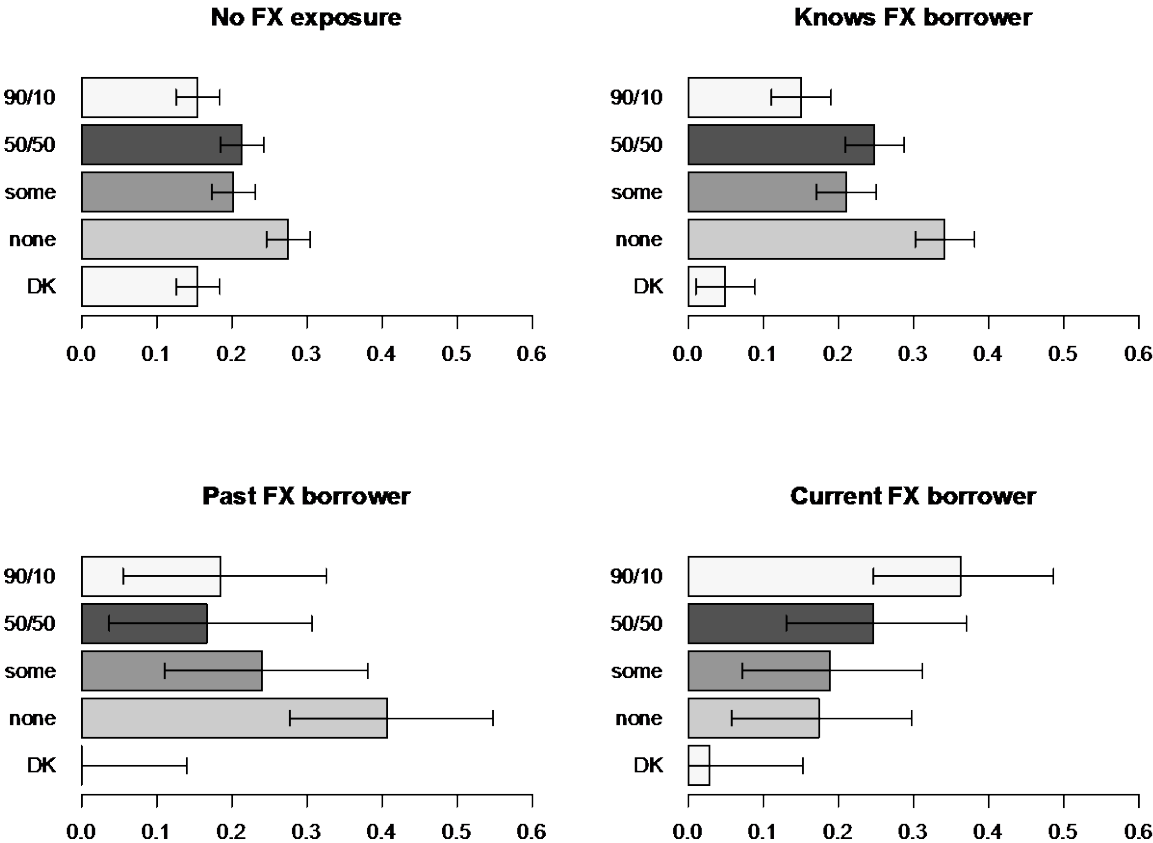
These descriptive analyses, which are corroborated by the regression analyses in tables 3 and 4, provide strong support for the notion that clearly-identified material interests have a strong interest on individuals' policy preferences, even in such an arcane area as exchange rate policy. The analysis also shows that those who are not exposed are less interested, but are also less inclined to support policy measures that do not benefit themselves.

5. FX exposure and voting behavior

Individuals directly affected by the Swiss franc shock were able to identify their material self-interest with regard to both the general contours of government intervention as well as

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specific policies designed to mitigate the damage of the shock to household balance sheets. This, of course, raises a related question: did these policy preferences affect respondents' voting behavior in the 2015 Polish general election?

The specific setting of the Polish election is interesting here (Marcinkiewicz and Stegmaier 2016; Markowski 2016): The PO, which had governed for two consecutive terms in coalition with the much smaller PSL, had been trailing the main opposition party, the PiS, in the polls for some time when the SNB abandoned its peg in January 2015. The pressure on the PO increased with the formation of new parties – most notably, .Nowoczenska – which also pushed a liberal-centrist platform. As foreshadowed by the polls, the PO did poorly in the election, garnering 15.1% less of the overall vote than in the 2011 elections, while the PiS gained about 8%.[19]

FX Borrowers compared to PO/PSL and PiS voters

Table 1 compares FX borrowers (current and past) alongside incumbent and PiS supporters who did not take out any FX loans. FX borrowers are similar to one another and notably different from the core PiS voters [20] on a variety of politically salient dimensions: income, urban/rural residence, education, self-placement on a left-right scale, and level of religious observance (high-to-low). FX borrowers are richer, more urban, more educated, less conservative and less religious than PiS voters. As current and past FX borrowers are more similar to PO/PSL than PiS voters, they were therefore not a "natural" constituency for the PiS.

Table 1: Comparing FX borrowers to PiS and incumbent core voters. Unweighted sample means and medians

	2011 PiS voters	2011 PO/PSL voters	Current FX	Past FX

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[19] Information of the distribution of vote shares and seat shares across parties in the 2011 and 2015 elections appear in the supplemental materials.
[20] We define PiS core voter to be respondents who reported voting for PiS in the *2011* election and with no exposure to FX loans.

Income quintile	Mean = 2.9	3.5	4.1	3.8
	Median = 3.0	4.0	5.0	4.0
Urban	Mean = 1.6	2.2	2.2	2.2
	Median = 1.0	2.0	2.0	2.0
Education	Mean = 2.4	2.7	3.4	3.3
	Median =2.0	2.0	4.0	4.0
Left-Right	Mean = 1.6	0.4	0.6	0.3
	Median = 2.0	0.0	0.0	0.0
Religiosity (inverse)	Mean = 2.2	2.9	3.1	2.9
	Median = 2.0	3.0	3.0	3.0

Note: The quantities in the first two columns exclude respondents who were current or past FX borrowers.

Not surprisingly, then, respondents currently repaying FX debts in 2015 had disproportionately supported the PO/PSL coalition parties in 2011. In our raw, unweighted sample, 53% of current FX borrowers who recall voting in 2011 report voting for PO or PSL, compared to an overall vote share of 35% in the full sample. When asked about their voting intentions for the 2015 elections, however, only 28% of current FX borrowers who had made a voting decision planned to support the PO or PSL, compared to 33% of the overall sample. This suggests that former (2011) PO/PSL voters may have moved toward the PiS, which had advanced the most pro-borrower bailout plan in response to the CHF shock.

To examine this more rigorously, Table 2 reports a series of regression models that investigate the relationship between FX debt exposure and voter behavior. The first model fits a weighted OLS regression to a three-category dependent variable describing respondents' turnout intentions; the highest value indicates certain turnout. The second and third models are logistic regressions on party choice—PO/PSL and PiS, respectively—among respondents who have not declared that they plan to abstain. Those who are uncertain about either their turnout decision or their party choice are coded as "don't know" and included in the analysis. In these latter two models, we include a dummy variable indicating whether a respondent voted for PO/PSL in 2011, along with its interaction with the FX exposure variables. The coefficient on the interaction terms represent the extent to which respondents with a particular level of FX debt exposure defected from the PO/PSL.

With regard to turnout, current and past FX borrowers, as well as those who claim to know someone with an FX loan, all plan to turn out higher levels than those with no FX exposure. At sample average values for the other covariates, all three groups are predicted to be somewhere between "not sure" and "certainly will vote." This finding holds even though we condition on variables that predict both turnout and FX debt exposure. Consistent with standard findings in the voter behavior literature, we also find that older, richer and more highly educated respondents are more likely to vote (Blais 2007).

Table 2: Polish voter behavior in 2015. Weighted regressions over 20 imputed datasets

	Turnout (OLS)	PO/PSL (logit)	PiS (logit)
(Intercept)	**0.83**	**-2.04**	0.09
	(0.13)	(0.59)	(0.61)
has FX loan	**0.20**	0.81	0.05
	(0.09)	(0.58)	(0.47)
past FX loan	**0.24**	0.16	-0.43
	(0.10)	(0.87)	(0.54)
knows FX borrower	**0.17**	-0.06	0.12
	(0.04)	(0.29)	(0.19)
2011 PO/PSL		**2.65**	**-2.72**
		(0.23)	(0.30)
FX x 2011 PO/PSL		**-1.56**	**1.22**
		(0.73)	(0.78)
past x 2011 PO/PSL		-0.06	0.76
		(1.03)	(1.08)
knows x 2011 PO/PSL		0.12	0.25
		(0.36)	(0.43)
18-31	0.01	-0.32	**-0.77**
	(0.05)	(0.23)	(0.24)
44-56	**0.14**	**-0.48**	**0.59**
	(0.05)	(0.21)	(0.22)
57-66	**0.29**	-0.25	**0.68**
	(0.06)	(0.22)	(0.24)
66+	**0.26**	-0.19	**0.77**
	(0.06)	(0.26)	(0.28)
female	-0.04	0.10	-0.14
	(0.03)	(0.14)	(0.14)
married	0.03	0.13	-0.13
	(0.04)	(0.16)	(0.16)
income	**0.05**	0.07	**0.18**
	(0.02)	(0.07)	(0.07)
education	**0.12**	-0.11	0.01
	(0.02)	(0.08)	(0.08)
urban	0.04	0.00	**-0.29**
	(0.02)	(0.09)	(0.10)
employed	0.05	-0.31	0.27
	(0.04)	(0.18)	(0.18)
religiosity	**-0.07**	**0.17**	**-0.50**
	(0.02)	(0.06)	(0.07)
household size	**0.03**	-0.02	0.06
	(0.01)	(0.06)	(0.05)
Left	**-0.19**	-0.22	**-1.17**
	(0.05)	(0.18)	(0.26)
Right	0.05	-0.30	**0.89**
	(0.04)	(0.16)	(0.16)
N	2044	1756	1756

Province dummies estimated but omitted from table. Bold coefficients indicate p-values of <0.05.

Examining the party choice models, we find that older, more religious, more rural, and richer respondents were more likely to support the PiS. Past support for the PO/PSL is a strong predictor of current support. This leads us to have further confidence in both our sample and the models. Looking at FX exposure, we find an important result: *FX exposure has no influence on vote choice among respondents who did not vote for the incumbent PO/PSL in 2011. However, among those currently paying back an FX loan, we find a large and significant defection away from the PO/PSL, even beyond the overall change in partisan support between the two elections.* In contrast, there was no discernable defection among similar voters (those with past FX borrowing experience or those who know FX borrowers), but without a material interest in more favorable conversion policy offered by the PiS. In the PiS model, we see that the coefficient on the interaction term for current FX borrowers and 2011 support for the PO/PSL is almost exactly the same magnitude as that in the second model, but with the opposite sign. *This implies that the PiS absorbed nearly all of the PO/PSL defectors among those with a direct stake in the Swiss franc shock. Voters with a direct material stake in the CHF shock not only responded as expected in terms of policy preferences, but also acted on these preferences by adjusting their voting behavior.*

We might wonder whether the behavior here actually represents voters' prospective interests. In the supplemental materials, we report additional analyses in which we replace voters' FX exposure with their reported policy preferences. Voters preferring a government intervention were much less likely to vote for the incumbent and much more likely to vote for the PiS than either voters preferring no intervention (the reference group) or voters preferring "some" intervention. Voters without an opinion were less likely to vote and also less likely to support the incumbent, displaying some evidence of retrospective voting among this group. These effects hold across past PO/PSL supporters, consistent with the notion that voters who felt most strongly about this policy supported the PiS and opposed the PO/PSL.

Interpreting the magnitude of the estimates in Table 2 is best done in the context of the 2015 election. Recall that the Polish seat allocation formula provides a boost to the party receiving the largest share of votes. The PiS won an outright parliamentary majority by a narrow five seat margin, despite receiving only 38% of the vote. Those currently repaying FX loans were a small slice of the electorate relative to the size of the PO's loss in vote share. Even if all of the FX-exposed citizens had cast their votes for PO, it is likely that the PiS would still have received the largest vote share. But it is conceivable that a small change in vote share could have prevented the PiS from winning an outright parliamentary majority, forcing it to govern in coalition. Did the Swiss franc shock tip the Polish election and enable the PiS to win its parliamentary majority?

In order to evaluate this possibility, we simulate hypothetical elections from our statistical models. This approach is admittedly rough; we do not account for the distribution of votes across electoral constituencies, nor do we get in to the details of Poland's electoral formula. Instead, we make some simple assumptions about the approximate relationship between vote share and seats—one seat for every 6% of the vote—and then generate 20,000 simulated election outcomes incorporating turnout and vote choice effects, as well as sampling weights and our estimation and imputation uncertainty. We then compare the predicted PiS vote share from models using the observed turnout and FX exposure data to those models where we model turnout and assume that no voters were exposed to foreign currency borrowing. We are interested in whether these differences in predicted vote shares are sufficiently large that the PiS might have failed to win a majority in the *Sejm*. Simulation details appear in the supplemental materials.

Figure 4 displays the distribution of differences between predicted PiS vote shares using the counterfactual scenario and the observed data. The vertical broken line represents the

value below which the PiS would have failed to win an absolute majority. *72% of the simulations yielded vote shares in which the PiS would have, at minimum, been forced to govern in coalition rather than unilaterally.* Clearly, then, the events surrounding the Swiss franc revaluation were consequential, even if restricted to a small, but materially exposed, subset of the population.

Figure 4: Counterfactual election outcomes in the absence of any CHF loan exposure

Effect of CHF shock on election outcome
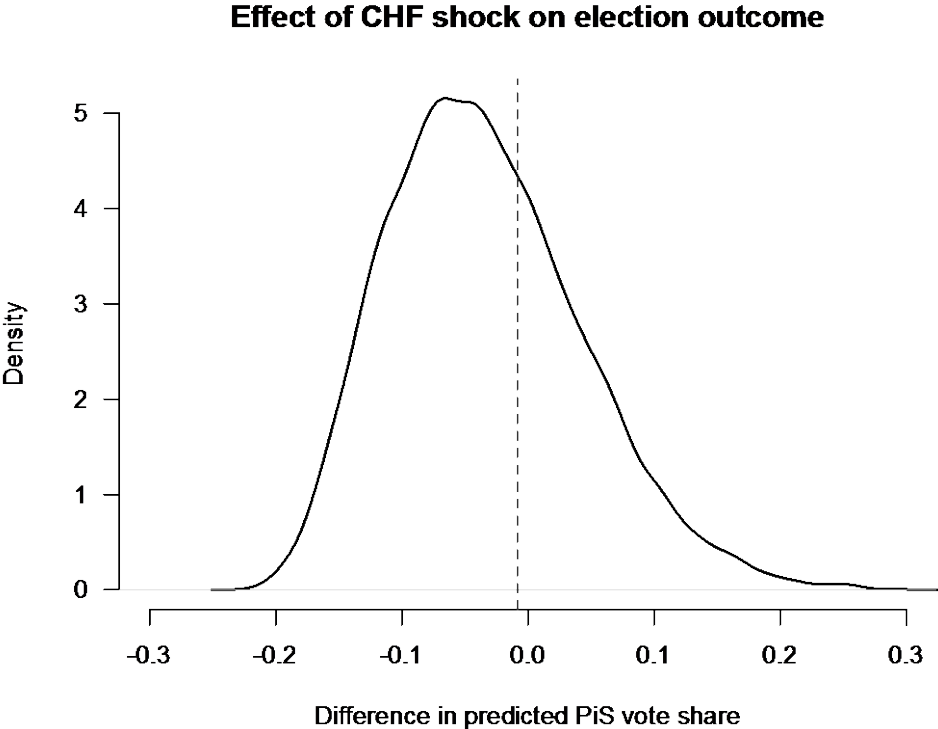
6. How to attract new voters without losing the core: an information experiment

To examine the causal mechanism linking the exchange rate shock to the electoral success of PiS, we embedded a randomized experiment in the CBOS survey that explores how Poles thought about the appropriate governmental response to the franc shock. Respondents were read a simple informational preamble immediately before answering the questions about

government policy.[21]   The stimuli were designed to influence respondent thinking about policy responses, not parties. One quarter of the sample received no additional stimulus, while one quarter of the sample received each of the following stimuli:

- *Treatment 1: Information stimulus*
  "Several European currencies including the zloty have lost a lot of value against the Swiss franc since January 2015. Some Polish households took out loans in Swiss francs to buy cars and houses. The currency decline has increased debt payments for those borrowers."

- *Treatment 2: Hungary stimulus*
  "Several European currencies including the zloty *and the Hungarian Forint* have lost a lot of value against the Swiss franc since January 2015. In Poland and Hungary some households took out loans in Swiss francs to buy cars and houses. The currency decline has increased debt payments for those borrowers. *In Hungary, the government has intervened by forcing banks to pay for these losses. In Poland, the government has not yet intervened.*"

- *Treatment 3: History stimulus*
  "Several European currencies including the zloty have lost a lot of value against the Swiss franc since January 2015. Some Polish households took out loans in Swiss francs to buy cars and houses. The currency decline has increased debt payments for those borrowers. *When a similar situation occurred in 2008, the Polish government chose to do nothing in response.*"

Treatment 1 aims to evaluate whether the provision of information about the common external origin of the CHF shock and its consequences in Poland influenced respondents' answers under the hypothesis that respondents were generally uninformed about the CHF shock. Treatment 2 is identical in wording to treatment 1 except for the italicized text. [22] This treatment provides additional context to aid in interpretation, in this case enabling "benchmarking across borders" (Kayser and Peress 2012).   We view this treatment as indicating some degree of feasibility for government intervention—after all, Hungary did it. Treatment 3 is again similar to the information stimulus except for the italicized text. This stimulus aimed to evaluate whether respondents' answers varied based on benchmarking across time, i.e., based on information about the Polish government's lack of response to a

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[21] There were several questions between the voter behavior questions later in the survey and the policy opinion questions. There was no evidence of any treatment effects for turnout or vote choice.
[22] It is also possible that using the example of Hungary could simply elicit reactions that display respondents' views of Hungarians or the Hungarian government. Text for interview protocols was in standard font.

similar situation in 2008, when the Swiss franc had also appreciated markedly against the zloty, although not as rapidly.[23] We view this treatment as casting doubt on the need for intervention, given that Poland weathered the last CHF shock without a major policy response.

Information effects on evaluations of government intervention

We first look at the simpler government intervention question asked immediately after the treatment (if any). To analyze the data in a regression setting we create a binary response variable, coded as "1" if the respondent answers "big" or "some" and "0" otherwise. In Table 3, we display results from a series of weighted logistic regression models.[24]

Model 1 includes only the randomized experimental quantities in which the (positive) coefficient for the information treatment is the only one distinguishable from zero. By way of comparison, *a respondent receiving the information stimulus is 19 percent more likely to demand some degree of government intervention to help FX borrowers compared to respondents in the control condition.* Including additional context, whether history or Hungary, produces smaller and insignificant coefficient estimates compared to information alone, although the differences between the treatment group coefficients are not distinguishable from 0 at the 95% level. Among our respondents there is no evidence that the Hungary and history treatments discernably enhance the information treatment.

Model 2 then includes the variables measuring FX exposure. We recover results mirroring those from Figure 2: those currently repaying FX loans are far more likely to support government intervention, whereas past borrowers and those who "know" FX

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[23] The Swiss franc appreciated more than 50% against the zloty (PLN), from 1.97 PLN/CHF in July 2008, to 3.12 PLN/CHF in February 2009. This followed a four-year period in which the exchange rate had moved in the opposite direction (from 3.06 PLN/CHF in February 2004) and during which a large number of Polish households had taken on CHF-denominated mortgages.

[24] We use a binary response as opposed to a simple OLS or ordered logit because we want to include the "don't know" responses, which do not fit naturally into ordered categories. Displays of the response distributions by treatment status and FX loan exposure for this and the following analysis can be found in the supplemental materials.

borrowers are not discernably different from those with no exposure. The predicted probability of demanding intervention among control group respondents currently paying back and FX loan is 0.71, compared to 0.44 those with no FX debt exposure. We find this large difference in opinion between those with and without a material stake in the issue and those without such an interest repeated across the remaining models.

Model 3 includes the other covariates, demonstrating that the relationship between preferences for government intervention among those currently repaying foreign currency debt remains even after conditioning on variables that predict whether a respondent has FX loans, as well as on variables that might affect political preferences. After conditioning on FX debt exposure, married and more educated respondents are less likely to prefer intervention, as are those in the 44-56 age window. Those in bigger households are more supportive of intervention.

Models 4 and 5 investigate whether there might be "heterogeneous effects" of our experimental treatments across different FX exposure groups, keeping in mind that the small number of respondents in the *current* and *past FX* groups make it difficult to evaluate across four experimental categories. Model 4 includes the treatment indicators and the FX exposure variables and their interactions. Model 5 adds in all of the covariates from Model 3. Here we see that *the positive treatment effect for the information stimulus is concentrated entirely among those with no exposure to FX debt.* Moreover, once we look within FX exposure subgroups, we see that the Hungary treatment also produces a significant, positive effect among the unexposed only, while the history treatment remains indistinguishable from zero at conventional thresholds.[25] While there is no evidence of any interaction effect among those currently paying off FX loans, the information stimulus produces a *backlash* against

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[25] Looking at Figure 2 in the supplemental materials we see that the treatment effect is the result of a higher proportion of information treatment respondents appearing in the "some" category and a lower proportion appearing in "none" and "don't know" when compared to the control group.

Table 3: Support for government intervention to assist foreign exchange borrowers. Weighted logistic regression across 20 imputed datasets

	Model 1	Model 2	Model 3	Model 4	Model 5
(Intercept)	**-0.22**	**-0.24**	-0.03	**-0.40**	-0.26
	(0.09)	(0.10)	(0.40)	(0.12)	(0.41)
history	0.12	0.14	0.18	0.27	0.29
	(0.13)	(0.13)	(0.14)	(0.17)	(0.18)
Hungary	0.19	0.17	0.21	**0.39**	**0.42**
	(0.13)	(0.13)	(0.14)	(0.17)	(0.18)
information	**0.30**	**0.31**	**0.37**	**0.60**	**0.66**
	(0.13)	(0.13)	(0.13)	(0.16)	(0.17)
has FX loan		**1.11**	**1.44**	**1.29**	**1.49**
		(0.28)	(0.30)	(0.59)	(0.61)
past FX loan		-0.36	-0.07	0.55	0.91
		(0.29)	(0.30)	(0.59)	(0.62)
knows FX borrower		-0.03	0.17	0.37	**0.56**
		(0.10)	(0.11)	(0.20)	(0.21)
18-31			0.19		0.20
			(0.15)		(0.15)
44-56			**-0.39**		**-0.38**
			(0.15)		(0.15)
57-66			0.02		0.04
			(0.17)		(0.17)
66+			0.04		0.06
			(0.19)		(0.19)
female			0.14		0.14
			(0.10)		(0.10)
married			**-0.23**		**-0.24**
			(0.11)		(0.11)
income			-0.05		-0.05
			(0.05)		(0.05)
education			**-0.14**		**-0.14**
			(0.05)		(0.05)
urban			0.06		0.06
			(0.07)		(0.07)
employed			-0.00		0.01
			(0.12)		(0.12)
religiosity			**-0.10**		**-0.09**
			(0.04)		(0.05)
Household size			**0.11**		**0.11**
			(0.04)		(0.04)
Left			-0.19		-0.18
			(0.13)		(0.13)
Right			-0.04		-0.04
			(0.11)		(0.12)
history X FX loan				1.93	2.13
				(1.57)	(1.59)
Hungary X FX loan				-0.37	-0.20
				(0.75)	(0.78)
info X FX loan				-0.79	-0.68
				(0.77)	(0.79)
history X past				-0.67	-0.75
				(0.78)	(0.81)
Hungary X past				-0.88	-0.94

	(0.96)	(0.99)
info X past	**-1.89**	**-1.98**
	(0.82)	(0.85)
history X knows	-0.37	-0.33
	(0.28)	(0.29)
Hungary X knows	-0.52	-0.53
	(0.28)	(0.29)
info X knows	**-0.65**	**-0.65**
	(0.27)	(0.28)

N=2044

Full covariate models include province dummies (omitted from table).

government intervention among past FX borrowers and those claiming to know someone who has an FX loan. A past FX borrower in the information treatment has a 0.3 *lower* probability of preferring intervention than one in the control group. This difference is discernable from zero at the 95% level, notwithstanding the small number of respondents in these categories.

In sum, we see that respondents least implicated and knowledgeable about the FX shock are the ones whose opinions are most malleable using simple contextual stimuli.

Evaluating the specific policy proposals

We next ask whether our experimental treatments had any effects on respondents' support for specific policy proposals. This question was asked after the government intervention question and is more cognitively demanding; it had its own informational preamble seen by all respondents. Table 4 reports coefficient estimates and standard errors for weighted multinomial logistic regression across 20 imputed datasets with "none" as the reference category.[26]

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[26] We do not investigate treatment effects by FX exposure subgroup for this question due to the small number of observations in the current and past FX borrower groups crossed with four treatment and five response categories.

Table 4: Support for different policy proposals. Weighted multinomial logistic regression over 20 imputed datasets

| | Preferred policy | | | |
	50/50	90/10	DK	some
history	0.12	0.29	0.30	**0.41**
	(0.19)	(0.21)	(0.24)	(0.19)
Hungary	0.21	0.41	0.31	**0.51**
	(0.19)	(0.21)	(0.24)	(0.19)
information	0.16	0.26	0.12	0.33
	(0.18)	(0.20)	(0.24)	(0.19)
has FX loan	**1.23**	**2.05**	-0.05	0.64
	(0.41)	(0.41)	(0.76)	(0.45)
past FX loan	-0.32	0.22	-4.21	-0.06
	(0.44)	(0.43)	(5.41)	(0.39)
knows FX borrower	0.18	-0.07	**-1.04**	-0.06
	(0.15)	(0.17)	(0.22)	(0.15)
18-31	0.05	0.19	-0.40	-0.07
	(0.20)	(0.23)	(0.27)	(0.20)
44-56	-0.32	-0.23	-0.48	-0.21
	(0.20)	(0.23)	(0.27)	(0.20)
57-66	0.32	0.44	-0.21	0.18
	(0.23)	(0.25)	(0.31)	(0.23)
66+	0.13	0.07	0.08	-0.02
	(0.26)	(0.29)	(0.32)	(0.26)
female	**0.28**	0.19	**0.75**	**0.57**
	(0.13)	(0.15)	(0.18)	(0.14)
married	**-0.44**	**-0.36**	**-0.38**	-0.03
	(0.15)	(0.17)	(0.19)	(0.15)
income	-0.07	**-0.18**	**-0.25**	-0.12
	(0.07)	(0.07)	(0.09)	(0.07)
education	-0.12	**-0.32**	**-0.32**	**-0.15**
	(0.07)	(0.08)	(0.10)	(0.07)
urban	0.005	0.08	**-0.27**	0.03
	(0.09)	(0.10)	(0.12)	(0.09)
employed	0.13	0.02	-0.06	0.02
	(0.17)	(0.18)	(0.22)	(0.17)
religiosity	**-0.18**	**-0.16**	0.03	-0.10
	(0.06)	(0.07)	(0.08)	(0.06)
household size	**0.11**	0.01	-0.06	**0.12**
	(0.05)	(0.06)	(0.07)	(0.05)
Left	-0.22	0.04	0.26	0.05
	(0.19)	(0.21)	(0.25)	(0.19)
Right	-0.14	0.01	0.29	0.01
	(0.16)	(0.17)	(0.22)	(0.16)
(Intercept)	0.50	0.95	**1.35**	-0.08
	(0.55)	(0.61)	(0.71)	(0.57)

$N = 2044$

Note: "None" is the reference category. Province dummies estimated but omitted.

The results in the table reinforce our earlier finding in Figure 3: those currently repaying an FX loan are far more supportive of a bailout, especially the most generous option. The model predicts that an average control group respondent who is currently paying back an FX loan will be three times more likely to prefer the 90/10 policy and 60% less likely to say "do nothing" than an identical respondent who is not exposed to FX debt in any way. Past FX debtors and those who know FX debtors are not discernably different from the unexposed in their preferences over bailout policies.

When focusing on specific policy proposals, we observe relatively weak effects for our informational stimuli. Although coefficients are uniformly positive for all treatments and outcomes (relative to "do nothing"), *the only significant treatment effects are for the history and Hungary stimuli, which make respondents more likely to choose "something" over "do nothing."* For the average respondent, the Hungary treatment increases the probability of choosing "some" from 0.28 to 0.34 while decreasing the probability of choosing "none" from 0.29 to 0.22. The history treatment shows a similar effect. Providing a stimulus does *not* reduce the probability of choosing "don't know." Among the other covariates, we find standard relationships: female respondents are less likely to offer an opinion, but those who do are more supportive of government intervention. More educated and richer respondents are more likely to offer opinions and more likely to think that the government should do nothing. Interestingly, policy preferences around bailouts for FX borrowers do not appear to line up along a traditional Left-Right axis. Self-reported Left-Right placement shows no relationship with policy preferences, mirroring findings for the government intervention question. This seems to indicate that policy around bailouts for FX borrowers cuts across traditional political cleavages.

7. Conclusion

The Swiss franc revaluation shock in Poland has allowed us to circumvent some of the main challenges hampering past research into the effects of economic shocks on electoral politics. Our analysis shows that such events can have significant political consequences, even if the shock only affects a small part of the electorate. In Poland, the January 2015 surprise Swiss franc revaluation and the question of how the adjustment costs should be distributed across borrowers (Polish households) and lenders (banks, many of which were foreign-owned) became a salient campaign issue in Polish electoral politics, embedded in a larger debate about Poland's place in the European Union and the global economy. In our analysis, we demonstrated the Polish voters responded in different ways. Those with a direct material stake favored generous bailout policies, and were more likely to switch their vote to support the party that offered it: the PiS. In contrast, those who had taken out FX loans in the past but who were no longer in repayment were, if anything, less likely to support a government bailout, although this group is similar to foreign currency mortgage holders in many respects. Those without exposure to the CHF shock were less likely to offer an opinion and less supportive of government intervention, but they were also more likely to react to our simple informational treatment. In short, their opinions were less carefully considered and more subject to electioneering, at the margin. Counterfactual analysis suggests that this shift in the small group of directly exposed voters may have been sufficient to push the PiS into an outright parliamentary majority.

Overall, our findings suggest that when the direct, material consequences of external shocks are unambiguous and the affected group is clearly identified, we can observe systematic differences in policy preferences and political behavior consistent with the affected group's economic interests. Whether these shocks are decisive in national elections depends on the scope of the shock, the size of the affected group, the electoral rules and institutions in a particular country, and the degree to which the affected group's dissatisfaction resonates

with broader concerns and political messages. In the Polish case, the PiS was successful at the ballot box, in part, by building out from its traditional base of nationalist, anti-EU voters through a concerted strategy of policies targeted at the narrow economic interests of specific groups such as CHF mortgage holders. Since the PiS only needed to attract a relatively small share of new voters in order to emerge victorious, this strategy made sense politically.

Although, many aspects of the Polish experience are unique, this case sheds light on the relationship between shocks in the global economy and domestic politics. In particular, it highlights how tightly integrated global financial markets serve as a transmission belt carrying national economic policy choices beyond borders, often with substantial economic and political effect. In this case, the Swiss National Bank's domestically-focused shift in its monetary policy had cross-border *political* externalities in Poland, via the substantial franc-denominated mortgage lending in the country. In other cases, the precise nature of such cross-border economic linkages will surely differ, with different groups being affected and mobilizing politically. Furthermore, differences in electoral systems and institutions will also mediate the degree to which the domestic distributional consequences of external economic shocks affect political outcomes. The conditions under which the broad patterns we find in the Polish case are visible elsewhere in the contemporary global economy is a fertile area for future research. Indeed, in light of similar events elsewhere – notably the UK's "Brexit" vote and the election of Donald Trump in the US – the Polish case demonstrates how populist, nationalist movements can cobble together winning electorates from the stable political support of an ideologically-motivated base and parts of groups adversely affected by economic events. This highlights the need for political scientists to integrate both material interest and sociological models linking identity, economic grievance, and domestic politics.

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