27 Corona spreads to emerging markets

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After an initial lull, financial markets reacted with a vengeance to the COVID-19 pandemic, touching all asset categories—stocks, bonds, commodities and currencies. Comparisons with 2008 are inevitable, but the ultimate impact on markets is still unclear. In this chapter, we suggest that the spread of the pandemic has limited explanatory power over financial stress. Initially, as the pandemic only affected advanced countries, markets penalized more emerging economies. Subsequently, emerging nations benefited from the global rebound of the markets, even though death rates are now expanding in the emerging world. Despite initial concern, emerging economies have been less penalised than in 2008. Once more, this has exposed the vulnerabilities of emerging markets to global shocks but also the importance of the coordinated actions by core central banks to supply liquidity to the markets.

The widespread nature of the world health emergency has spurred an active debate on the economic implications of the COVID-19 pandemic and the required policy reaction to 'flatten the curve' – both the epidemiological curve and the curve of the inevitable recession that accompanies it (Gourinchas 2020).

The implications of this large coordinated shock for financial stability are also under scrutiny, with the focus of financial fragility located outside the banking sector, unlike 2008 (Danielsson et al. 2020, Acharya and Steffen 2020). Nevertheless, more than a decade of liquidity injections by central banks have resulted in a highly leveraged corporate sector, which makes it fragile to a credit crunch, even if coming from the shadow banking sector (Goodhart and Pradhan, Danielsson et al. 2020). In this setting, conventional monetary policy (hampered by the zero lower bound, anyway) or even the unconventional policies put in place after the Global Financial Crisis (GFC) may not be up to the task (Cochrane 2020).

As in the wake of the GFC, policymakers must also consider the externalities of their actions, both in terms of public health and economic policies. There is a call for international coordination to cushion the economic downturn and restart the world economy (Berglöf and Farrar. 2020, Group of Concerned Economists 2020). The nature of the global shock should determine the priorities in terms of cooperation, namely, coordinated fiscal stimuli or monetary easing, for example via central bank swap lines.

In this chapter, we take a cue from the reaction of financial markets to the unfolding medical emergency to identify the nature of the financial shock and the policy implications therefrom.

How markets priced COVID-19: OECD versus emerging markets

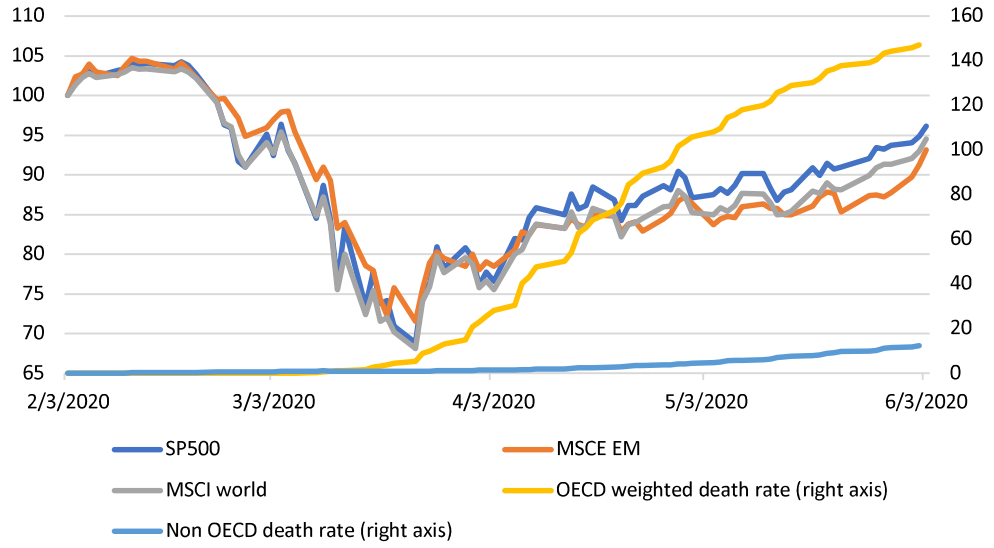
The COVID-19 virus appeared in Wuhan, China, in December 2019. Until February, when the virus erupted in Italy, the threat to the world economy was thought to be minor. As the virus spread in Europe and countries reacted with partial lockdowns, it became clear that the world economy is facing a major crisis. Global financial markets reacted strongly by the end of February (Figure 1). A formal break test points to 10 March, when the end of year rally that began on October 2019 fully reversed itself. However, by the end of March, the US stock market started to recover.

Figure 1 SP500 January 2019 to June 2020

The crisis was felt in all major financial assets and markets. The MSCI world stock price index mirrored Wall Street (Figure 2). The MSCI emerging markets followed suit. The view that emerges from world stock markets is a high degree of co-movement. We plot in Figure 2 the weighted (by population) average death rate in OECD and non-OECD countries. After initially overshooting, financial markets started recovering even as death rates were accelerating among OECD countries. In emerging markets, death rates are still rising, albeit from a lower level.

It is clear that, in the aggregate, markets are anticipating the recovery from the crisis and assuming that the worst is behind us. It is also apparent that COVID 19 is treated by stock markets as a global phenomenon without discriminating against emerging economies. On the positive side, continued co-movement and recovery suggest that stock markets are not anticipating an end to globalism.

Figure 2 World stock prices



Foreign exchange markets also reacted strongly to the pandemic (Figure 3). Unlike stock markets, we can see that emerging markets, echoing previous global crises, initially suffered a larger depreciation than advanced economies. However, emerging economies' exchange rates stabilized relative to advanced economies' currencies by the end of March (Figure 4), at the same time that stock markets started to recover. In May, an increasingly rapid spread of COVID-19 to less developed economies, mainly in Latin America, was correlated with a 4% appreciation of a basket of emerging economies' currencies. Arguably, the immediate response of monetary authorities in the leading economies also improved the outlook for emerging economies.

Taken as a group, emerging countries have depreciated by 8% versus advanced economies' currencies. In comparison, from the beginning of the Lehman crisis in September 2008 to the end of March 2009 (when stock markets started to recover), the same basket of emerging countries' currencies depreciated by 20%. While foreign exchange markets 'punished' emerging markets more than they did advanced ones, they did so to a lesser extent than in the GFC.

Figure 3 Reaction of foreign exchange markets, February to June 2020

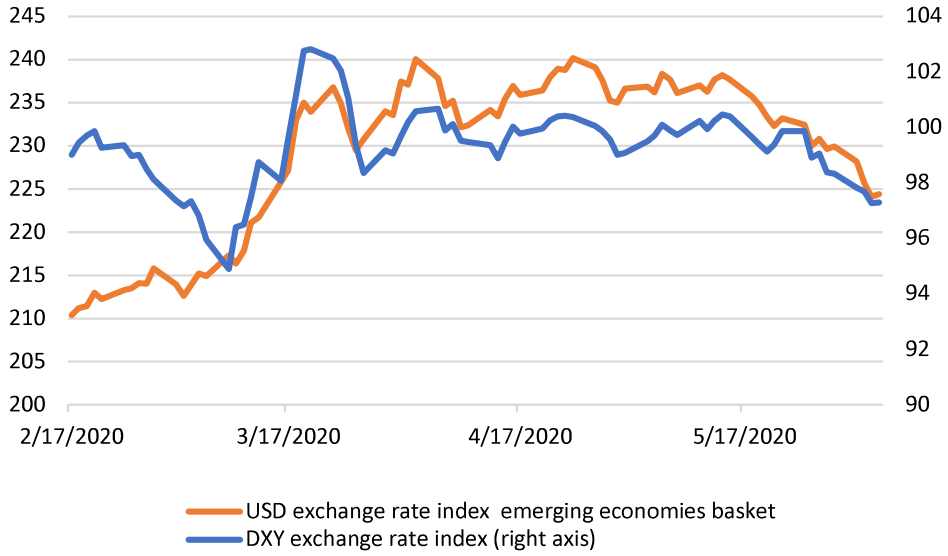
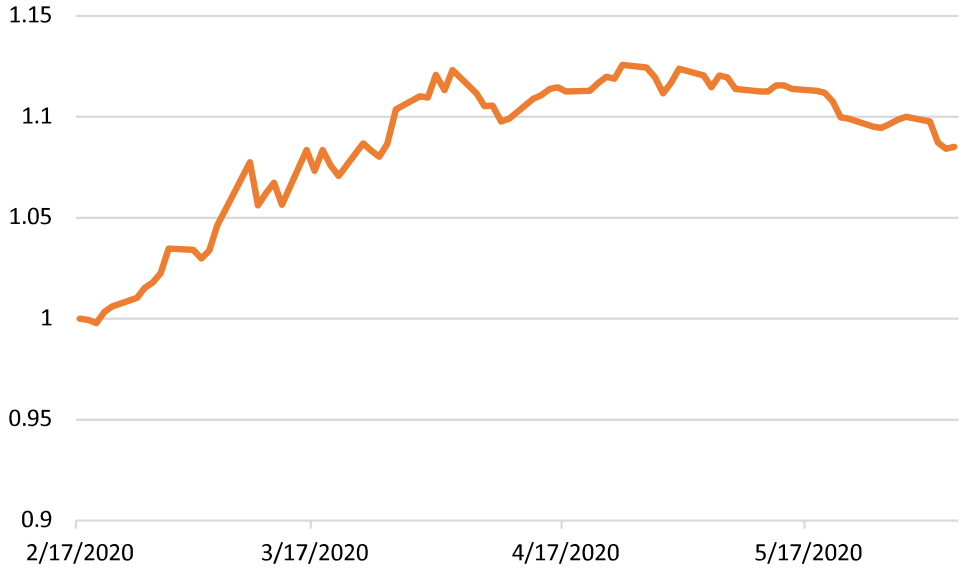


Figure 4 Relative depreciation of emerging market currencies, February-June 2020



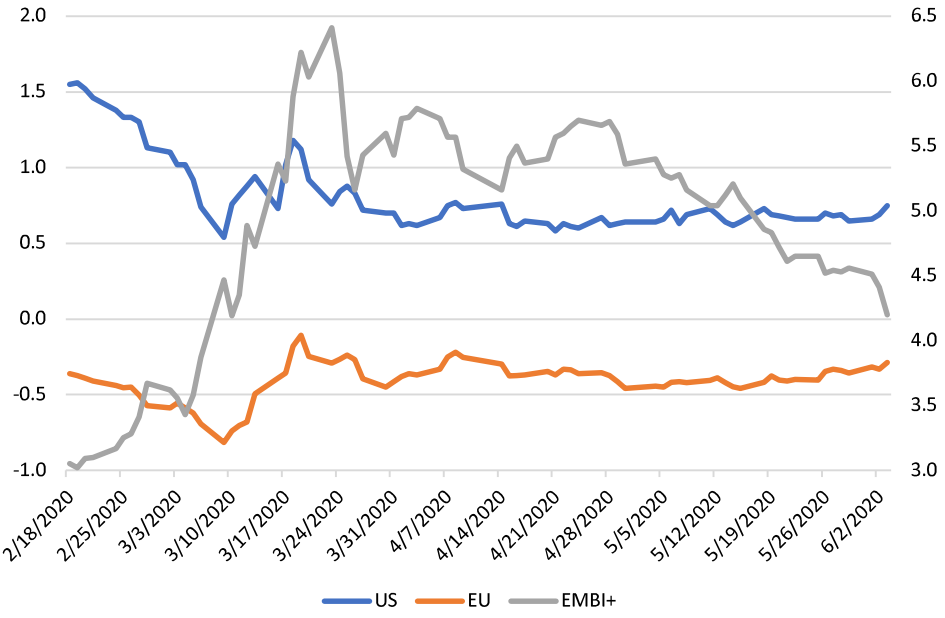
The aggregate results analysed above are essentially uncontrolled correlations that could mask more adverse effects for emerging market economies. To address this concern, we assembled a panel data set of 167 countries and tested whether foreign exchange markets reacted differentially to COVID-19 deaths in emerging countries, controlling for pre-existing conditions. We regressed the daily change in the exchange rate as a function of COVID-19 death rate; a control for time elapsed since this variable captures the 'flattening of the curve.' For a smaller subset of (57) countries, we also controlled for start-of-period country 10-year bond spreads vis-à-vis the US to capture pre-existing risk premium and expected depreciation. All specifications included two lags of the dependent variable to capture exchange rate dynamics. We interacted the explanatory variables (except for FX depreciation lags) with a dummy that equals one if a country belongs to the OECD.

Our panel data analysis shows that daily currency depreciation is positively affected by death rates. Increases to a country's death rate from COVID-19 brings about a daily depreciation of the exchange rate vis-a-vis the US dollar. However, when we introduce a differential effect for OECD and non-OECD economies, the significance of the effect of death rates on exchange rate devaluations declines and, quite surprisingly, COVID-19 death rates affected only OECD countries. In the smaller sample, countries that had higher risk premiums initially (spreads) versus the US, which were mainly emerging countries, suffered greater depreciation irrespective of their exposure to COVID-19. When it comes to emerging markets, it seems that markets (so far) ignored their country-specific death rates. Recall from Figure 2 that death rates, as of the time of writing this paper, are an order of magnitude lower in emerging economies compared to advanced economies.

When we account for time elapsed since the first death, the regression results indicate that as time progresses, exchange rates are converging back to the original rates. Moreover, as time progresses, the effect of death rates on exchange rate depreciation is mitigated by the convergence trend. When we introduce a differential effect for OECD and non-OECD economies, we find that non-OECD economies enjoy an advantage over emerging economies in terms of returning to pre-crisis exchange rates. Again, this result echoes the aggregate picture of Figures 3 and 4. Despite rising death rates in emerging economies, their exchange rates are stable, all be it, at more depreciated levels than their OECD counterparts.

Another view on the financial repercussions of COVID-19 can be gleaned from the sovereign bond market. The initial impact of the crisis on emerging market bond yields was very strong. The EMBI+ spread increased from 300 to 650 basis points within a month (Figure 5). At the beginning of the GFC, in September 2008, emerging market spreads increased from 300 to 850 basis points. Similarly to exchange rates, the impact on emerging markets was smaller than in 2008. Moreover, the EMBI+ spread has recovered most of the losses by June 2020. As we saw in the case of foreign exchange depreciation, the EMBI+ spreads have recovered despite the spread of COVID-19 to emerging markets. This suggests that country risk in emerging markets is reacting to the global financial system's recovery rather than to the rising death toll.

Figure 5 Ten-year bond yields



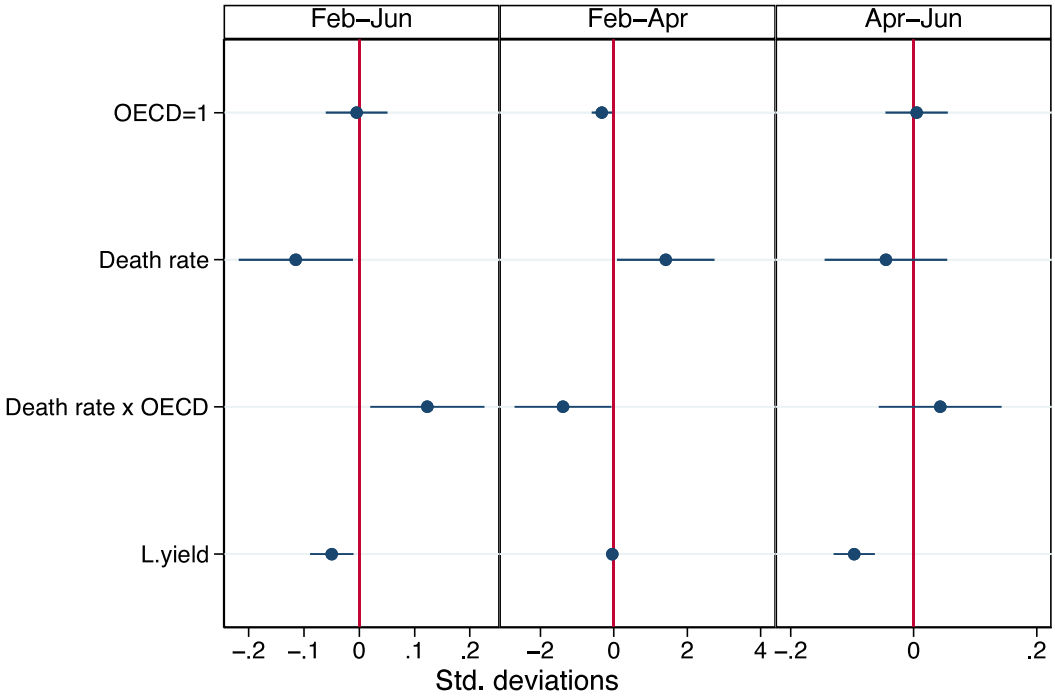
These aggregate trends hide a substantial amount of variation across and within groups of countries. Not all emerging markets have been affected by the pandemic in the same proportion, as, for example, the recent death tolls are much higher in Brazil and Mexico than in China or Argentina.

We used the same panel of 57 countries to test for a differential impact of the pandemic on the 10-year bond spreads against the US. We regressed a simple model of the change of spreads on each country' s daily death rates, base yields, debt burden (gross public debt/GDP), number of days since the first recorded deaths, and foreign exchange depreciation. Because depreciation is likely to be endogenous, we instrumented it with lagged values of itself and the death rate. Finally, we controlled for common shocks,

namely, the US Treasury yields and world mortality rates. We interacted the death rates with the same OECD dummy. Our results, plotted in Figure 6, show that markets seem to incorporate the dynamics of the pandemic.

The first panel of Figure 6 contains the marginal effects of the main variables of the model estimated for the full sample (1 February to 4 June). Puzzlingly, we estimate that a one standard deviation shock to death rates results in a faster bond spread contraction by 0.1 standard deviations per day. This effect is fairly small, but it is consistent with the results for foreign exchange in that OECD nations did not benefit from this 'death prize,' unlike emerging ones. Other controls behave as expected; in particular, we find a negative relation between lagged base yields and change in spreads and a positive effect of FX depreciation on yields (not represented).

Figure 6 Average marginal effects on 10-year bonds



Dependent variable: change in 10yr bonds spreads (against the US); **Deaths rate**: deaths per million; **L.yield**: lagged bond yield; **FX deval**: lagged FX devaluation against USD. **Sample** includes 57 countries.

However, if we split the sample by the two phases of the markets' reaction to the pandemic (as implicit in Figures 2 and 4), the effects line up with expectations. In the 'acceleration phase' (February to April), the marginal effect of deaths is positive and much larger at 1.4 standard deviations. In our sample, this is equivalent to 20 basis points per day, definitely a non-trivial amount. Furthermore, this 'death penalty' only applies to emerging and developing nations. In the 'deceleration phase' (right panel), markets are no longer taking notice of death rates in both groups of nations.

This evidence underscores the fact that markets treated this crisis as another global financial shock, as opposed to an idiosyncratic health crisis. As the early phase of the pandemic disproportionately touched advanced nations, markets penalised more the financial assets of emerging nations, which at that point had barely been affected by COVID-19 (apart from China). In the second phase, the rebound of the currencies and bonds of emerging nations also lagged the recovery among advanced nations. On the positive side, despite the growing pace of contagion among EMEs (Figure 2), these economies are benefitting from the global financial markets' normalisation. While their death rates are still an order of magnitude lower than in OECD nations, they are enjoying a rapid decile in spreads (Figure 5). And yet, the mainly advanced nations with higher death tolls are the ones benefiting now from a faster reduction in spreads against the US.

In other words, the evidence from financial markets looks very similar to the beginning of previous global recessions. Indeed, most of the immediate response, mainly from central banks, echoed those of 2008, albeit with a much shorter time lag. Though the US is not immune to the COVID-19 pandemic, now, as then, US assets provide a safe haven in times of global crisis. Then as now, emerging markets' financial assets seem to exhibit a larger price decline. Therefore, the role of the FED in supplying global liquidity is paramount.

Policy implications

The effect of the deaths from the virus is significant, yet explain only a small fraction of the variance in asset prices over our period of investigation. Therefore, the treatment, especially by central banks, of the crisis as yet another global financial crisis is appropriate. The crisis exposes, again, the vulnerabilities of emerging markets to global shocks even though their death rates continue to be lower, emphasizing the need to build up liquidity reserves. However, contrary to initially very pessimistic outlook (Bolton et al. 2020), it seems that the moves by the major central banks to supply liquidity and stabilise financial markets have also benefited emerging economies. It also appears that, so far, emerging economies have been less penalised than in 2008. At least, as captured by stock markets, exchange rates, and bond spreads, the recent surge in deaths in emerging economies has not reignited the financial panic we observed earlier in the crisis.

Finally, before the crisis, the financial community and economists were deeply (overly?) interested in cryptocurrencies. This was the first market test under duress for these currencies. Despite massive injections of liquidity by the FED, there is no run against the USD in favour of cryptocurrencies.

What about allegedly stable currencies such as Libra? Our analysis of global financial data crisis highlights, again, the need for monetary authorities that can immediately inject liquidity and support fiscal efforts to provide for millions of quarantined households is an important first line of defence in the face of a global crisis. As the Great Depression famously showed, fixed exchange standards and links to gold compound the economic costs of global macro shocks (Eichengreen 1992). The case for credible but flexible sovereign currencies seems to have been strengthened by this pandemic. At best, Libra and similar products could be yet another financial asset. Still, they are not what money is about and why society invented it and entrusted its management to central banks.

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Data appendix

Dates: 16 February to 30 March 2020.

List of countries: Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong- Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Kenya, Latvia, Lithuania, Malaysia, Mexico, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Philippines, Poland, Portugal, Qatar, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, United States, Vietnam.

COVID-19 daily data: https://www.worldometers.info/coronavirus/

Exchange rates: https://www.xe.com/currencytables/

Bond yields: https://tradingeconomics.com/bonds

Market indices: https://finance.yahoo.com/

Openness (Imports to GDP ratio): World Bank: https://data.worldbank.org/indicator/ne.imp.gnfs.zs

Table A1 Change in spreads of 10 bonds, 17 February to 23 March 2020

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
devaluation	7.765*		8.183**		7.335*					
	(2.67)		(2.72)		(2.47)					
F.X. variability						28.82**		29.87**		27.59**
						(3.23)		(3.30)		(2.94)
Deaths-per-capita t		-0.172	-0.233*				-0.172	-0.233**		
		(-1.64)	(-2.48)				(-1.64)	(-2.69)		
Deaths-per-capita t+1				0.007***	0.003*				0.007***	0.003
				(3.74)	(2.08)				(3.74)	(1.46)
OECD	0.475*	-0.215	0.259	0.030	0.513*	0.758**	-0.215	0.515	0.0304	0.786**
	(2.46)	(-1.09)	(1.16)	(0.19)	(2.56)	(3.05)	(-1.09)	(1.82)	(0.19)	(3.04)
OECD*devaluation	-0.11***		-0.02***		-9.588**					
	(-3.70)		(-3.51)		(-3.37)					
yield	0.089*	0.111**	0.070	0.111*	0.086	0.094*	0.111**	0.076	0.111*	0.090*
	(2.12)	(2.79)	(1.64)	(2.68)	(1.98)	(2.47)	(2.79)	(1.99)	(2.68)	(2.30)
OECD*deaths-per-capita		0.179	0.238*				0.179	0.238**		
		(1.70)	(2.52)				(1.70)	(2.75)		
OECD*deaths-per-capita				-0.010***	-0.007**				-0.010***	-0.006*
				(-3.89)	(-3.01)				(-3.89)	(-2.45)
OECD* F.X. variability						-37.63***		-36.63***		-36.08***
						(-4.05)		(-3.78)		(-3.63)
N	54	54	54	54	54	54	54	54	54	54

Notes: t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A2 Devaluation vis-à-vis the US dollar, 17 February to 23 March 2020

	(1)	(2)	(3)	(4)	(5)
Deaths-per-capita t		-0.003	0.015		
		(-0.25)	(1.28)		
Deaths-per-capita t+1				0.001***	0.0003*
				(6.84)	(2.35)
openness	-0.046**		-0.035		-0.032
	(-2.80)		(-1.85)		(-1.71)
euro	-0.051***		-0.057**		-0.063**
	(-3.83)		(-3.40)		(-3.49)
yield	0.004		0.007		0.005
	(1.15)		(1.65)		(1.39)
OECD		-0.0005	0.048	0.0002	0.037
		(-0.02)	(1.77)	(0.01)	(1.55)
OECD*deaths-per-capita		0.002	-0.015		
		(0.17)	(-1.32)		
OECD*deaths-per-capita				-0.0005*	-0.0003
				(-2.52)	(-1.34)
N	54	54	54	54	54

Notes: t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3 Devaluation vis-à-vis the US dollar, 17 February to 23 March 2020

	(1)	(2)	(3)	(4)	(5)
Deaths-per-capita t		-0.0004	0.003		
		(-0.12)	(0.91)		
Deaths-per-capita t+1				0.0002***	0.0001**
				(8.16)	(3.30)
openness	-0.016***		-0.012*		-0.011*
	(-3.56)		(-2.30)		(-2.07)
euro	-0.005		-0.008*		-0.009*
	(-1.65)		(-2.02)		(-2.25)
yield	0.0004		0.001		0.001
	(0.50)		(1.16)		(0.87)
OECD		0.006	0.014	0.007	0.013
		(0.96)	(1.92)	(1.31)	(1.95)
OECD*deaths-per-capita		0.0003	-0.003		
		(0.07)	(-0.94)		
_ OECD*deaths-per-capita				-0.0002***	-0.0001*
				(-4.31)	(-2.02)
N	54	54	54	54	54

Notes: t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$