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The Politics of Surprise Devaluations: Modelling Motives for Giving Up a Peg

Frank Bohn*
Radboud University Nijmegen

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Summary

Planned "surprise" devaluations are often spurred by non-economic circumstances: a rent-seeking government; political instability; or the opportunity to put the blame on a predecessor government. In this paper, these aspects are incorporated in the monetary and fiscal policy framework first suggested by Alesina and Tabellini (1987). It is shown that reneging on a fixed exchange rate promise unambiguously produces short term benefits, but long run losses. This leads to a non-straightforward trade-off between greediness (propensity for expropriation) and political stability (which implies a low time preference). The findings are empirically relevant and theoretically robust to extensions.

1 Introduction

An exchange rate peg may be abandoned under two fundamentally different circumstances. First, a country may be forced by the financial markets to give up its fixed exchange rate regime. Such market-driven devaluations are the focus of the currency crisis and contagion literature. Second, a country may deliberately devalue its currency without being forced to do so (henceforth planned devaluation). The traditional argument for a planned devaluation is to gain an economic advantage by improving one's competitiveness vis-a-vis one's trading partners. Last year's (limited) devaluation of the Chinese yuan vis-a-vis the US dollar may have been done to limit the appreciation of the yuan relative to the weaker euro (Davis/Wei, The Wall Street Journal, 2012). Nonetheless, it left the US angry with its exports becoming yet more expensive in China. Other motives for planned devaluations originate in political considerations or non-economic circumstances: a rent-seeking government, political instability, or the possibility to put

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the blame on somebody else. Consider blaming (which is analysed in an extension of the main model). Malawi, for instance, had originally resisted pressure by the IMF to devalue its currency. On 7 May 2012, shortly after Joyce Banda was elected president, the Malawi kwacha was, however, devalued to facilitate an agreement with the IMF. Whenever a government can keep the political cost down, for instance by blaming the devaluation on a predecessor, a devaluation seems attractive.[1]

The other two non-economic reasons, political instability and rent-seeking, are at the heart of this paper. First, take political instability, i.e. a high probability for the government to lose power in the next period. In an empirical study, Edwards (1996: 162) finds that "more unstable countries have a lower probability of selecting a pegged-exchange-rate system." If there is political instability, the government's perspective is more myopic and it may want to go for short term gains, possibly produced by monetary (or fiscal) stimulation. A resulting inflation would force the government to devalue the currency, if a currency crisis situation is to be avoided. This may have been the reason why the Italian government chose to conduct less stability-oriented policies than most other European countries during the early 1980s; the Italian lira had to be devalued several times within the Exchange Rate Mechanism of the European Monetary System (EMS). There was a lot of political instability during the 1980s; on average, the Italian government changed more than once a year.

Second, consider rent-seeking, especially grand corruption.[2] Such behaviour by the government may have been another or contributing reason for accepting several orchestrated devaluations in Italy in the early 1980s. The web of grand corruption was only unveiled during the "Mani Pulite" (Clean Hands) investigations beginning in 1992. Expansionary policies had facilitated corrupt activities by the major political parties hitherto forming the government.[3] The surge of primary expenditure during the period of devaluations in the early 1980s was financed by a surge in tax revenue, not an increase in the primary deficit (Balassone et. al. 2002: 783 and Chart 2, 784). Another example: the January 2010 devaluation in Venezuela offered the opportunity for directly raising the extend of grand corruption. Measured in national currency, oil proceeds collected by the

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[1] A similar situation occurred in Mexico in 1994 when Ernesto Zedillo became the new president. Zedillo hoped to ease the pressure on the peso without being made responsible for reneging on a fixed exchange rate promise. Notwithstanding enormous economic risks and public declarations to the contrary, the Greek government under Antonis Samaras may have toyed with the idea of leaving the euro zone in 2012/13 (which would have implied a devaluation), because it could have put the blame on its European partners, especially on Germany.

[2] Following Bohn (2013: 479) rent-seeking by the government will be interpreted as exploiting public office for personal advantage, irrespective of the attempt being legal or illegal. "Petty corruption or bribery refers to government employees. Grand corruption means that the leadership uses its policy setting power for obtaining some personal advantage. This can take very different forms, for instance directly expropriating government funds ..." – an aspect emphasised in this paper.

[3] A similar argument could, again, be made for Greece. Ignoring the huge economic risks, it should have been attractive for the political elites in Greece to leave the euro zone in 2012/13 because it would have allowed them to preserve a corrupt and tax-evading system. This is how Greece is described, for instance, by Mitsopoulos and Pelagidis (2012); or by historian Heinz Richter (interview by Sgries 2012). In the Transparency International (2011) Corruption Perceptions Index 2011 Greece ranks 80th of all countries with a score of 3.4 on a scale from 1 to 10 with 10 representing a clean government. (As of the 1980s, there is no data on Italy, but in the first Transparency International report as of 1995 Italy scored 2.99.)

government increased drastically and could be used for spending programmes prior to the upcoming elections (Lackey 2010).

The role of rent-seeking becomes conspicuous when comparing countries in which political instability plays no role. Mexico and Chile in the mid-1970s are a suitable case for such a comparison. Despite economic turbulences Mexico was politically very stable; the Institutional Revolutionary Party made sure it regained power for a period of 71 years until the mid-1990s. In a different way, Chile was also politically stable during Pinochet's dictatorship. However, there is a huge difference in the level of corruption in both countries, with governance being poor in Mexico, but markedly better in Chile (Gleditsch 2008). In fact, Mexico conducted very expansionary fiscal policies. As a result, Mexico should be more likely to devalue than Chile. In 1976 Mexico did devalue, whereas Chile preserved a crawling peg regime.

Alesina and Wagner (2006: 784) include political stability and governance as indicators of institutional quality and find that "typically ... better institutions are associated with more pegged [exchange rate] regimes".[4] Their paper can, however, not explain what happens[5] when bad governance or (grand) corruption do not coincide with political instability – as in Mexico. We could also think of Indonesia's 20-year-long period of fixed exchange rates until 1997. During that period, Indonesia was haunted by (grand) corruption and defective governance, which according to Alesina and Wagner would point towards floating exchange rates. Yet, the high level of political stability with Suharto in power for 32 years could be taken as support for Indonesia's long period of fixed exchange rates. Overall, empirical studies (see footnotes 4 and 5) offer at best a blurred picture of the potential trade-off between political stability and rent-seeking; the theoretical literature thus far ignores it altogether.

This paper offers a stylised theoretical framework for capturing the trade-off between political stability and grand corruption in the government's choice for devaluing its currency. Two strands of the literature are related, but cover only one of the two aspects each, either the role of a low time preference (which is fostered by political stability) or the effects of corruption (though typically not grand corruption). Hence this paper can be seen as an extension to both strands of the literature. The first strand is on the time-inconsistency of monetary policy and emphasises that the central bank's temptation to renege on monetary policy commitments is curtailed (i.e. cooperation is sustained), if the future matters sufficiently (relatively low time preference).[6] The folk theorem saying that trigger strategies can enforce cooperation was first proven by Friedman (1971). Rubinstein (1979) showed it for grim trigger strategies, which are also employed in this

[4] Hossain (2009) argues that the relevance of institutions for the choice of the exchange rate regime depends on the level of financial development. Edwards (1996) emphasises the role of political instability. Other reasons for the choice of the exchange rate regime are surveyed by Husain et al. (2005), Carmignani et al. (2008), and Levy-Yeyati et al. (2010); for the choice of anchor currencies by Meissner and Oomes (2009).

[5] And this applies more generally, not just for institutional variables. There is limited understanding in the choice of exchange rate regimes. "Perhaps the greatest disappointment is in the empirical modeling of causes of exchange rate regimes" is how Rose (2011: 655) puts it in his summary of Klein and Shambaugh's (2010) book *Exchange Rate Regimes in the Modern Era*.

[6] This applies in an infinite horizon model. In a finite horizon setting, backward induction produces a trivial (non-cooperative) result because not to cooperate is always optimal in the last period. (Of course, the same also applies in a one period model.) On the justification for an infinite horizon setting, see, for instance, Obstfeld and Rogoff (1996: 59).

paper. Fudenberg and Maskin (1986) show that this translates to low inflation rates, if the central bank is patient enough (i.e. has a low enough time preference). This paper links low inflation rates to the ability to preserve an exchange rate peg.

The second strand of the literature, for instance Huang and Wei (2006), Hefeker (2010) and Bohn (2013), uses the monetary and fiscal policy framework originally developed by Alesina and Tabellini (1987).[7] Hefeker (2010) links the domestic monetary policy to the exchange rate regimes, but the time-inconsistency argument applies equally. In Huang and Wei (2006) and Hefeker (2010), fiscal policy is hampered by low institutional quality due to petty corruption. In the "basic set-up" of Huang and Wei (2006) corruption is exogenously given, whereas Hefeker (2010) and an extension of Huang and Wei (2006) give the government an instrument for fighting corruption. In Bohn (2013), corruption is also costly, but the government's attitude towards corruption is different. There, the government does not fight corruption; instead the government *causes* grand corruption.[8]

The model of this paper describes a government which strives for low inflation and high output, but also, explicitly, for grand corruption (greed) – as in Bohn (2013). Political instability is incorporated in the analysis by explicitly accounting for the intertemporal structure of the problem. The more politically unstable, the more will a government try to exploit an output-enhancing inflationary surprise in the short run. This will have to be weighed against the loss from higher inflation in the long run. If the government is more corrupt, it will treasure the benefits from an inflation surprise more. It turns out that grand corruption and political instability both contribute to a government's desire to devalue. However, this also means that it could be optimal for two countries with a similar degree of political stability (like Mexico and Chile) to pursue different exchange rate policies. Overall, there is a non-straightforward trade-off between grand corruption and political stability.

There is yet a third strand of the literature which, by way of contrast, relates to this paper. That strand focuses on currency crises, but ignores the possibility of surprise devaluations. This paper takes the opposite approach. It emphasises surprise devaluations, but ignores any currency crisis dynamics. It is assumed that a currency crisis can be avoided because there are sufficient reserves and/or expectations do not support self-fulfilling prophecies leading to a currency crisis. In Mexico in 1994 or during the EMS period, market participants expected a devaluation with a positive probability (so-called Peso Problem). Asset prices were discounted; yet there was no currency crisis which would have forced a devaluation. In fact, it may have been the other way round. In Mexico in 1994, for instance, the devaluation "surprise" by the new government actually triggered a currency crisis in its aftermath and produced a new exchange rate much below the one that had already been priced in. During the era of the Exchange Rate Mechanism of the EMS, there were several "surprise" devaluations, for instance of the Italian Lira. In the model here, it is assumed that a devaluation always carries an element of surprise. What is more, the exchange rate is considered to be fully credible, a simplification which makes a devaluation appear overly beneficial, but does not change the qualitative results.

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[7] A weakness of the original model as well as all successor models is that international linkages are neglected. Effects of the real exchange rate on trade are ignored since aggregate demand is not modelled. Nor are any financial market transactions captured by those models.

[8] In Bohn (2013), spending and expropriation can be financed by borrowing from the future; in the other papers, the budget must be balanced in each period.

Planned "surprise" devaluations as we find them in reality have not yet been explained in rational expectations models. Wu (2008), for instance, studies devaluations under varying degrees of institutional quality (petty corruption) and, basically, confirms Obstfeld's (1994; 1996) multiple equilibria result. If a devaluation were planned, it would be rationally expected by agents and, therefore, lead to a currency crisis in those models. Rational agents can only be surprised, if they face an information asymmetry – as implicitly assumed in this paper. Alternatively, the aforementioned authors suggest to include a fixed reputation cost in the loss function to justify credibility. The effects of such an explicit extension are reported in Section 3. Irrespective of the justification for credibility used, this paper focuses on the motives for planned devaluations and their trade-offs.

The remainder of the paper is organised as follows. Section 2 presents the parsimonious model framework and its solution. Section 3 discusses the trade-off between political stability and grand corruption in the government's choice for devaluing its currency. It also reports the results of two extensions: taking account of the seigniorage effect of inflation makes a devaluation more likely; including the political cost makes it less likely. They do, however, not change the key insights which are brought out more easily in the parsimonious setup of the model developed in Section 2. The paper concludes with suggestions for future research.

2 The model

The government's linear quadratic loss function in period t is assumed to comprise three components, deviation of inflation rate ε_t from a desired inflation rate of zero, deviation of output y_t from hypothetical trend output $\bar{y}$, and expropriation revenue (output is taxed at rate τ_t):

$$L_t = \frac{1}{2}\left[(\varepsilon_t)^2 + \theta(\bar{y} - y_t)^2 - \delta(\tau_t y_t)\right], \qquad \theta, \delta > 0\,. \tag{1}$$

A standard quadratic formulation is used for the inflation objective (unit weight) and the output objective[9] (exogenous weight θ) which capture the government's interest in the economy as a whole. The third term in equation (1) reflects the government's intention to exploit society. The government is assumed to desire as much as possible expropriation revenue which depends on government instrument τ_t, the tax rate, multiplied by tax base y_t, the actual output. Expropriation revenue $\tau_t y_t$ is a gain, i.e. it enters negatively in the loss function. The exogenous weight δ the government puts on expropriation will be called greed. Three comments must be made. First, I abstract from the government's choice on what else it could spend its revenue on. As in, for instance, Barro and Gordon (1983) or Obstfeld (1996), there are no public goods or other public finance decisions. By simplifying the model I focus on the government's choice between economic conditions (inflation and output) on the one hand and rent-seeking on the other hand.

Second, seigniorage does not augment the expropriation revenue. This is a more serious caveat than the previous one, because one of the effects of one of the government's instruments, inflation (as a shortcut for money growth), is ignored. As an extension to

[9] It suffices to model the desired output as $\bar{y}$ instead of $k\bar{y}$ with $k > 1$. Optimal expropriation will depress output below $\bar{y}$, thereby preserving the idea of the time-inconsistency literature that an output-enhancing monetary surprise is desirable because it reduces the overall loss. See equation (2).

the main results, this will also be discussed in Section 3. Third, the gain from expropriation enters the loss function linearly. This makes sense because the marginal benefit of rent-seeking should not increase in the amount of rent-seeking. In fact, one might think of a less than linear increase in marginal benefit. However, this is not necessary because what matters, qualitatively, is the difference in exponent between the effects in the loss function of rent-seeking (linear and negative) and those of the social objectives (quadratic and positive). Essentially, the amount of rent-seeking is limited by the more and more disastrous effects of inflation and output losses.

Output is determined by a modified Lucas supply curve which incorporates the effect of distortionary taxation as in Huang and Wei (2006):

$$y_t = \bar{y} + \phi(\varepsilon_t - \varepsilon_t^e) - \psi\tau_t, \qquad \phi, \psi > 0\,. \tag{2}$$

Output y_t deviates from hypothetical trend output $\bar{y}$ for two reasons: (i) expected inflation ε_t^e differs from actual inflation ε_t (surprise inflation motive); and (ii) expropriation carries a burden because taxes are distortionary (expropriation motive). The effect of taxes on supply could also be called the operational costs of production which are affected by the degree of rent seeking in the economy.[10] As in Obstfeld (1994, 1996) and Wu (2008), domestic inflation is associated with the rate of depreciation, both of whom being denoted by ε.[11] The monetary component in the supply function now captures any deviation of changes in the exchange rate from *expected* changes in the exchange rate. Output can, therefore, not be boosted by a devaluation, if it is fully anticipated.

The government's optimal choice is derived from the intertemporal minimisation problem:

$$min\ L^s = \sum_{t=T}^{\infty} \rho^{t-T} L_t^s \qquad \text{s.t. (2)} \qquad t = T, T+1, \ldots \infty, \qquad s = c, r\,; \tag{3}$$

where ρ refers to the government's time preference (or *effective* discount factor – to be discussed further down) and superscript s to the alternative government strategies "complying" (c) or "reneging" (r). Market participants are willing to believe the government's fixed exchange rate promise, unless the government cheats in period T. Then they will play a grim trigger while expecting the government to cheat all the time. The consistent strategy for the government will, therefore, be not to go back to its complying strategy. This setup captures the main idea of the paper that a government can choose between complying with its fixed exchange rate promise or surprising agents with a devaluation. The paper is not about (flexible) trigger strategies which force the government to return to a cooperation. It is about the government's motives for giving up more stability-oriented

[10] Barelli and de Abreu Pessôa (2012) capture the cost of rent seeking more explicitly in a two sector model. There, "the 'tax rate' τ represents any sort of distortion that might characterize the economy, which could be a tax itself" (p. 7). It corresponds to "the share of output of the productive sector that is extracted by the unproductive sector" (p. 9). Distortions associated with grand corruption could, for instance, be produced by artificially set-up monopoly licences in nepotistic systems.

[11] For indications on the derivation of equation (2), see electronic Appendix A, which can be found at www.jbnst.de/en as additional content fo this paper. – Equation (2) does not include random shocks which would be useful for explaining self-fulfilling prophecies and currency crisis dynamics. Since this is not the focus of this paper, there are no random shocks – as in the original Alesina and Tabellini (1987) model. Here, the government's rational choice of monetary (or fiscal) policy – as outlined in the next paragraph – would not be affected qualitatively, if shocks were considered.

monetary policies in favour of more inflationary policies despite losses from reneging. In the real world, the change of policy could reflect a switch from a peg *to* a crawling peg; or from a peg, a crawling peg or even a stable exchange rate preserved by dirty floating *to* fully flexible rates.

The intertemporal setting allows us to compare the losses of the complying and the reneging strategy over all periods.[12] In that respect, the paper goes beyond the scope of most of the aforementioned papers.[13] For minimising its loss, the government must consider trade-off effects of fiscal policy and of monetary policy as well as the interdependence of both of them. First, by choosing a tax rate $\tau > 0$ the government can enrich itself. But higher taxes negatively affect output y_t (which is also the tax base for the government's expropriation). So the first trade-off is between expropriation tax and output in every period. Second, consider using the monetary policy instrument ε.[14] Creating a surprise inflation only works for one period because expectations will adjust. Thereafter, the government will be stuck with higher inflation rates, which imply continued devaluations. Thus, the second trade-off refers to output stimulation now versus higher inflation now *and* in the future. Third, consider the interdependence between both instruments. If the government reneges, there will be (compared to complying) expansionary effects in the short run. Raising output above its optimal level will prompt the government to make adjustments in its optimal choice of policy. It will be able to increase expropriation by raising the tax rate in period T, τ_T, because it can afford the partially offsetting (negative) effect on output.

Depending on the government strategy of complying or reneging in period T only one or both policy instruments can be employed. For the complying strategy, monetary policy cannot be used by construction. The optimal tax rate, and the resulting loss in each period, which actually is a gain ($L_t^c < 0, t = T, T+1, T+2, \ldots$) due to the expropriation possibility, is outlined in electronic Appendix B. As for the reneging strategy, the government employs both instruments. In period T, there are no devaluation expectations, so that the government can use its monetary policy instrument to achieve the optimal surprise inflation (see Appendix D – sufficient conditions are derived and discussed in Appendix C). Compared to the complying strategy, there are additional losses due to higher inflation as well as inflation expectation induced gains in output. The latter allows the government to increase the tax rate, which, in turn, has a stronger disincentive effect on output. A non-zero choice of inflation would not be optimal, if the government could not raise the gain above that of the complying strategy (thus $L_T^r \leq L_T^c$). In period T+1 and all other future periods, the government can also use both instruments, but it optimises inflation only to validate private agents' expectations (see Appendix E). The additional inflation loss is still present but the output-enhancing inflation surprise is gone. Therefore, taxes are also back to "normal" (complying strategy level). As a result, the

[12] For the actual calculation further down, the losses of the reneging strategy and the complying strategy will be compared per period; then the present discounted value of all net period losses will be calculated to obtain the overall gain (or loss) from reneging.

[13] As in Méon and Rizzo (2002), the budget must, however, be balanced each period and output changes in one period do not have capacity effects for the following period.

[14] It is assumed that the government can determine inflation, respectively the loss of the value of its currency. Either (i) the central bank is controlled by the government (as, for instance, in Agell et al. 1996); or (ii) the central bank is independent, but shares the government's objective function. In any case, devaluation decisions are typically taken by the government, even if the central bank is independent.

gain in T+1, T+2, etc. is smaller compared to the complying strategy, maybe even turns into a loss ($L_t^r \geq L_t^c, t = T+1, T+2, \ldots$).

Quantitatively, the period gain from reneging can be calculated from equations (B.3), (D.4) and (E.4) in the electronic Appendix:

$$G_T = L_T^c - L_T^r = \frac{A}{B(B-C)} > 0, \tag{4}$$

$$G_t = L_t^c - L_t^r = -\frac{A}{B^2} < 0, \qquad t = T+1, T+2, \ldots, \tag{5}$$

with

$$A = \frac{1}{2}\left(\frac{1}{2}\delta\bar{y}\right)^2\phi^2\left(\theta\psi + \frac{1}{2}\delta\right)^2 > 0, \qquad B = \psi(\theta\psi + \delta) > 0, \qquad C = \phi^2\left(\frac{1}{2}\right)^2\delta^2 > 0,$$

$B - C > 0$ according to Appendix C.

This means that reneging has an unambiguous advantage in present period T, but is costly in all future periods (T+1, T+2, etc.). Intuitively, an optimising government would not be willing to incur a loss in future periods T+1, T+2, etc., if it could not gain from reneging in current period T. But whether reneging is advantageous overall depends on the discount factor used by the government. However, the effective discount factor ρ ($0 < \rho < 1$) will also be influenced by the government's chances to stay in power. This may depend on more or less rigged elections (as during Mubarak's 30-year rule in Egypt until 2011; or under the 71-year rule of the Institutional Revolutionary Party in Mexico) or on the chances for a revolution or a coup d'état (as, for instance, in many Latin American countries in the 1970s or 1980s). In any case, modelling the chance to stay in power as a response to the government's behaviour in each period is difficult and somewhat arbitrary. Even in democracies election outcomes are often strongly influenced by random events like foreign policy incidents, terror attacks (e.g. Madrid bombings in Spain in 2004) or natural disasters (e.g. flooding of the river Oder in Germany in 2002). A simpler alternative is to assume a constant *exogenous* chance of losing power in each period. No matter how this is modelled, incorporating political instability into the analysis has only one effect: the discount factor is reduced.[15] In the following, constant effective discount factor ρ subsumes (i) normal time preference; and (ii) political instability.

The overall gain G^O from a permanent switch to flexible exchange rates can be calculated as the net gain in T minus the discounted net losses (negative gains) in all future periods (T+1, T+2, etc.):

$$G^O = G_T + \sum_{t=T+1}^{\infty} \rho^{t-T} G_t = \frac{A[(1-2\rho)B + \rho C]}{B^2[B-C](1-\rho)}. \tag{6}$$

Exogenous parameters θ, δ, ϕ and ψ as well as exogenous discount factor ρ (fostered by political instability) determine, if the overall gain of switching is positive or negative. Theoretically, the government chooses to switch to flexible exchange rates in period T and sticks with flexible rates thereafter, if the overall gain is positive. If not, the government chooses to uphold its fixed exchange rate commitment indefinitely.

[15] I follow Edwards (1996) who assumes that the effective discount factor is a function of political instability. Méon and Rizzo (2002) discuss the effects of political instability on a government's choice of the exchange rate regime; Bohn (2007) on a government's public finance decision.

3 Discussion

Since the effective discount factor (including political instability) is constrained ($0 \leq \rho < 1$) and $B > C$ (electronic Appendix C), the denominator in equation (6) must be positive. The numerator is positive for $\rho \leq \frac{1}{2}$, but may or may not be positive otherwise:

$$G^O > 0 \iff \rho < \frac{1}{2} + \frac{C}{2(2B - C)} \tag{7}$$

$$\text{with} \qquad 0 \leq \frac{C}{2(2B - C)} < \frac{1}{2} \quad \text{since} \quad B > C \quad \text{according to Appendix C.}$$

For given exogenous parameters θ, ϕ and ψ, equation (7) establishes a relationship between ρ, δ and G^O which is sketched in Figure 1 below. As the government becomes more and more greedy, i.e. δ goes up, it expropriates the economy more and more by increasing tax rate τ_t, thereby choking back output. δ approaches its Supremum δ^{max} for $B \to C$. The limiting case $B = C$ defines a quadratic equation in δ which has only one positive root, δ^{max}. It can be shown that δ must be smaller than δ^{max}. The overall gain G^O goes to infinity for δ approaching δ^{max}, but decreases for smaller values of δ. Plausibility beyond the model suggests some limits for the maximum values of both δ and ρ. Realistically, we cannot be close to δ^{max}, because there would be a lasting effect on output capacity and hence output in the following periods. Capacity effects are, however, not captured in the model since we treat all periods independently. We should also assume that the effective discount factor is below, say, .95, even if there is no political instability at all (due to normal time preference considerations).

Figure 1 shows the region of positive overall gain in a $\rho - \delta$ diagram. As long as $\rho \leq \frac{1}{2}$ (extreme political instability), the overall gain will always be positive. This means that a fixed exchange rate regime can never be an option for a rational government in a very unstable environment. For any given $\rho > \frac{1}{2}$, the overall gain will turn negative at some stage for decreasing values of δ (thus suggesting a fixed exchange rate). A smooth and slightly concave curve connecting the points $(\frac{1}{2},0)$ and $(1,\delta^{max})$ defines the border between positive (above) and negative overall gains (below). This implies that a greedy government

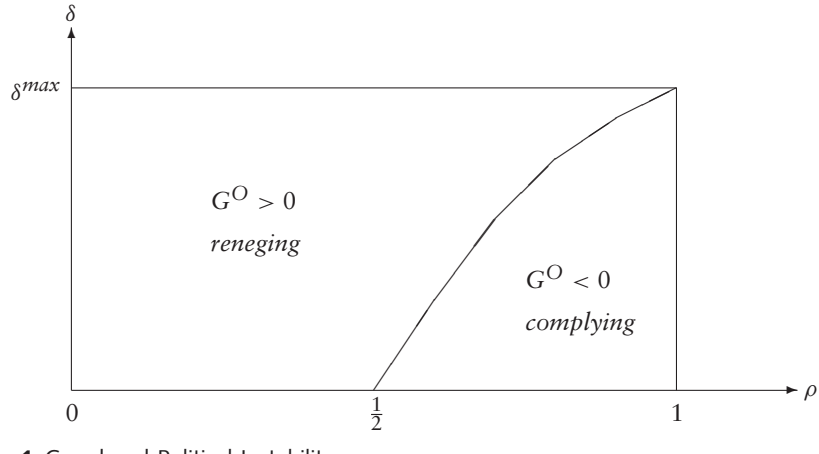

Figure 1 Greed and Political Instability

(high δ) would want to stick to fixed exchange rates, as long as there is very little political instability (very high ρ) It would also be rational to keep fixed exchange rates, if greed is low, even though there is quite a lot of political instability (but $\rho > \frac{1}{2}$). Between those two extremes, political stability can be traded off for greed.

Ceteris paribus, higher levels of greed δ favour a devaluation, because the increase in taxes made possible by a surprise inflation is valued more. However, political stability (high ρ) tempts a government to forego the short run benefit of a surprise inflation in favour of the long run advantage of low inflation. A low greed (high stability) government would want to comply with the fixed exchange rate regime as, for instance, in the case of Chile in the 1980s. However, it can be rational for a government to renege despite high levels of political stability, if the government is very greedy. This would be the case, for instance, of Mexico during the same period.

The model and its results could also be understood in another way. We could reinterpret expropriation as the desired level of expenditure in big welfare states. (Obviously, a fuller model would be required to capture the demand side including government spending.) As the model stands, it may, nonetheless, point at big redistributive governments (especially in unstable political environments) finding it more difficult to maintain a fixed exchange rate regime. Again, Italy as of the early 1980s might serve as an example. The model of this paper suggests that Italy used an expansionary (inflationary) monetary policy to create room for sustaining its welfare state.

To make the given model more realistic, two natural extensions come to mind: (i) seigniorage as a government revenue; and (ii) the political cost of devaluation. Not only does expansionary monetary policy produce inflation and, possibly, an inflation surprise, but it also has a revenue effect (seigniorage) and means a loss of reputation for previously promised stability of the money supply and the exchange rate (political cost). The technical aspects of both extensions are outlined in electronic Appendix F. Seigniorage is, clearly, an additional advantage of switching to flexible exchange rates. The solution of the complying strategy does not change, because (stylised) stability-oriented monetary policy produces zero inflation and, thus, no seigniorage. However, reneging and then being stuck with expansionary policies (resulting in continuous devaluations) raise, in every period, an inflation tax which can then, potentially, be expropriated by the government. As a result, the overall gain becomes more positive for given parameter values. The region of positive overall gain in Figure 1 expands; the demarcation line moves to the right.

The political cost of devaluation is modelled as an extra cost of reneging, $C(\varepsilon_t)$ in the loss function, as in Obstfeld (1994, 1996) or Wu (2008). In the Wu (2008) paper the political cost is necessary to ensure that complying may at all be advantageous for the government. The intertemporal structure of this paper highlights the fundamental trade-offs between complying and reneging. It may be optimal for the government to comply, even if the political cost is not considered. This is a strength of this paper. Including a political cost for giving up a peg means that the period T gain from reneging is reduced. Depending on the magnitude of those costs the demarcation line would shift more or less far to the left. If the blame for giving up a peg can be put on the political opposition or a foreign institution, this can be interpreted as a reduction of the political costs, thereby making a devaluation more likely. In summary, both extensions (seigniorage as a government revenue and political costs of a devaluation) produce countervailing effects, but the logic

of the argument of the original model does not change. The results are only affected quantitatively.

Further model extensions could basically go in two directions: refining the existing model; or incorporating new aspects. First, there is plenty of scope for studying feedback effects. This could be, more explicitly, between political stability and grand corruption on the one hand and economic performance (for instance, inflation and output/unemployment) on the other hand. This could also be between grand corruption and political instability. Their impact on the government's decision on reneging on an exchange rate peg may differ as suggested by this paper, but grand corruption and political instability are not necessarily two independent events. Arguably, a more corrupt government would also tend to be a more unstable one, unless other factors limit the possibility of a change of government (for instance because the government uses a lot of resources to control the opposition). If corruption and political instability are related, the choice facing the government might change considerably. It might be in the interest of a corrupt government to limit the amount of state capture/grand corruption through a fixed exchange rate policy, if this increased the probability of remaining in power. Or, on the contrary, a government that faces no risk of loosing power might not have any incentive to achieve macroeconomic stability, but simply aim at the maximum possible amount of state capture (Zimbabwe is the case in point). Modelling explicitly the political process and the political constraints faced by a corrupt government offers opportunities for future research.

As for the second direction, one could think of combining government motives for planned devaluations with market-driven devaluations. Wu (2008), for instance, studies devaluations under varying degrees of institutional quality and, basically, confirms Obstfeld's (1994, 1996) multiple equilibria result. In those cases, however, their model set-up does not allow for planned "surprise" devaluations as we observe them in reality. If a devaluation were planned, it would be rationally expected by agents and, therefore, lead to a currency crisis in those models. The challenge is to model rational agents, but allow for surprise devaluations, nonetheless. How can we combine the real world feature of planned "surprise" devaluations with rational agents? We would have to capture the essence of the Peso problem, i.e. that agents price in the chance of a surprise devaluation. Multiple currency crisis equilibria could still be possible. However, rational expectations could produce a non-crisis result, but the government could still choose a surprise devaluation thereafter because of a negative realisation of a shock. However, it is not very realistic to assume that the government can respond to an output shock before private agents can adjust their expectations. Therefore, we should think in terms of a shock to the government's behaviour, for instance its attitude towards grand corruption (for instance, the greed parameter in the model); or, differently, with respect to government competence – as suggested by Rogoff and Sibert (1988) in the context of political business cycles. Such shocks could justify planned "surprise" devaluations and currency crises at the same time.

In an extended Alesina and Tabellini (1987) type model this paper investigated a government's choice of honouring or reneging on a fixed exchange rate peg. It emphasised the political motives for a surprise devaluation, especially the trade-off between rent-seeking and political stability. Combining the logic for surprise devaluations with the currency crisis logic would be a valuable next step.

References

Agell, J., L. Calmfors, G. Jonsson (1996), Fiscal Policy when Monetary Policy Is Tied to the Mast. European Economic Review 40: 1413-1440.

Alesina, A., G. Tabellini (1987), Rules and Discretion with Noncoordinated Monetary and Fiscal Policies. Economic Enquiry 25: 19-630.

Alesina, A., A. Wagner (2006), Choosing (and Reneging on) Exchange Rate Regimes. Journal of the European Economic Association 4: 770-799.

Balassone, F., D. Franco, S. Momigliano, D. Monacelli (2002), Italy: Fiscal Consolidation and its Legacy. Paper presented at the forth Workshop on Public Finance organised by the Banca d'Italia, available at http://www.bancaditalia.it/studiricerche/convegni/atti/fisc_policy/iv/4.5_balassone_franco_momigliano_and_monacelli.pdf.

Barelli, P., S. de Abreu Pessôa (2012), Rent-Seeking and Capital Accumulation. Economic Inquiry 50: 399-417.

Barro, R., D. Gordon (1983), Rules, Discretion and Reputation in a Model of Monetary Policy. Journal of Monetary Economics 12: 101-122.

Bohn, F. (2007), Polarisation, uncertainty and public investment failure. European Journal of Political Economy 23: 1077-1087.

Bohn, F. (2013), Grand Corruption Instead of Commitment? Reconsidering Time-Inconsistency of Monetary Policy. Journal of International Money and Finance 32: 478-490.

Cagan, P. (1956), The Monetary Dynamics of Hyperination. In: M. Friedman (ed.), Studies in the Quantity Theory of Money. Chicago: University of Chicago Press.

Canzoneri, M. (1985), Monetary Policy Games and the Role of Private Information. American Economic Review 75: 1056-70.

Carmignani, F., E. Colombo, P. Tirelli (2008), Exploring Different Views of Exchange Rate Regime Choice. Journal of International Money and Finance 27: 1177-1197.

Davis, B., L. Wei (2012), China Shift Course, Lets Yuan Drop. The Wall Street Journal, 25 July 2012.

Edwards, S. (1996), Exchange Rates and the Political Economy of Macroeconomic Discipline. American Economic Review 86: 159-163.

Friedman, J.W. (1971), A non-cooperative equilibrium for supergames. Review of Economic Studies 38: 112.

Fudenberg, D., E. Maskin (1986), Folk Theorems for Repeated Games with Discounting or Incomplete Information. Econometrica 54: 533-554.

Gleditsch, K.S. (2008), Modified Polity P4 and P4D Data, Version 3.0. Available at: http://privatewww.essex.ac.uk/~ksg/polity.html.

Hefeker, C. (2010), Taxation, Corruption and Exchange Rate Regime. Journal of Macroeconomics 32: 338-346.

Hossain, M. (2009), Institutional development and choice of the exchange rate regime: A cross-country analysis. Journal of The Japanese and International Economies 23: 56-70.

Huang, H., S.-J. Wei (2006), Monetary policies for developing countries: The role of institutional quality. Journal of International Economics 70: 239-252.

Hughes Hallett, A., D.N. Weymark (2004), Independent monetary policies and social equity. Economics Letters 85: 103-110.

Husain, A.M., A. Mody, K.S. Rogoff (2005), Exchange rate regime durability and performance in developing versus advanced economies. Journal of Monetary Economics 52: 35-64.

Klein, M.W., J.C. Shambaugh (2010), Exchange Rate Regimes in the Modern Era. The MIT Press, Cambridge, MA, and London.

Lackey, M. (2010), Ination and Corruption on the Horizon as an Endangered Chávez Gambles to Retain Popularity. Published by the Council on Hemispheric Affairs (http://www.coha.org).

Levy-Yeyati, E., F. Sturzenegger, I. Reggio (2010), On the endogeneity of exchange rate regimes. European Economic Review 54: 659-677.

Meissner, C.M., N. Oomes (2009), Why do countries peg the way they peg? The determinants of anchor currency choice. Journal of International Money and Finance 28: 522-547.

Méon, P.-G., J.-M. Rizzo (2002), The Viability of Fixed Exchange Rate Commitments: Does Politics Matter? A Theoretical and Empircal Investigation. Open Economies Review 13: 111-132.
Mitsopoulos, M., T. Pelagidis (2012), Understanding the Crisis in Greece: From Boom to Bust. 2nd edition, Palgrave Macmillan, United Kingdon.
Obstfeld, M. (1994), The Logic of Currency Crises. Cahier Economiques et Monétaires 43: 189-213.
Obstfeld, M. (1996), Models with Currency Crises with Self-fulfilling Features. European Economic Review 40: 1037-1047.
Obstfeld, M., K.S. Rogoff (1996), Foundations of International Macroeconomics. The MIT Press, Cambridge, MA, and London.
Rogoff, K.S., A. Sibert (1988), Elections and Macroeconomic Policy Cycles. Review of Economic Studies 55: 1-16.
Rose, A.K. (2011), Exchange Rate Regimes in the Modern Era: Fixed, Floating, and Flaky. Journal of Economic Literature 49: 652-672.
Rubinstein, A. (1979), Equilibrium in Supergames with the Overtaking Criterion. Journal of Economic Theory 21: 19.
Sgries, S. (2012), Griechenland ist so an die Wand gefahren, dass jeder sieht: Wir müssen einen neuen Staat bauen. Rhein-Neckar-Zeitung, 27 July 2012.
Transparency International (2011), Corruption Perceptions Index 2011. Available at: http://cpi.transparency.org/cpi2011/.
Wu, Y. (2008), The Role of Institutional Quality in a Currency Crisis Model. International Monetary Fund, Working Paper WP/08/5.

Dr. Frank Bohn, Radboud University Nijmegen, IMR, Department of Economics, P.O. Box 9108, 6500 HK Nijmegen, The Netherlands.
f.bohn@fm.ru.nl