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The dangerous ineffectiveness of negative interest rates: the case of Switzerland

Sergio Rossi*
University of Fribourg, Switzerland

This paper argues that the negative interest rate adopted by the Swiss National Bank in 2015 has elicited a series of negative consequences across the Swiss economy. It has led an increasing number of agents to invest their savings in the real-estate market, whose prices have overheated, threatening the eruption of a housing crisis. It has also induced a number of financial institutions to turn to riskier businesses in an attempt to continue to earn some returns, thereby increasing financial fragility at systemic level. The paper suggests that a small Tobin tax on all Swiss-franc purchases may contribute to the support of domestic economic activities much better than negative rates of interest.

Keywords: *negative interest rates, Swiss monetary policy, Tobin tax*

JEL codes: *E52, E58, E65*

1 INTRODUCTION

Since the eruption of the global financial crisis in 2008 and the subsequent euro-area crisis in 2009, the Swiss-franc exchange rate has been subject to robust and persistent pressures. As a result, the franc has strongly appreciated with respect to several major currencies, notably the US dollar, the British pound, and particularly the euro. To be sure, that appreciation cannot be explained only by the large Swiss current-account surpluses as Switzerland ran surpluses for many years before the global and euro-area crises erupted – without inducing such pressures on the Swiss franc. After several interventions in the foreign-exchange market to contain these pressures through massive foreign-currency purchases in the 2009–2011 period, the Swiss National Bank (SNB) decided to introduce a minimum exchange rate against the euro (1.20 Swiss francs for 1 euro). This exchange-rate floor was introduced on 6 September 2011, when the Chairman of its Governing Board announced that the SNB was thereby 'aiming for a substantial and sustained weakening of the

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Swiss franc' (Hildebrand 2011, p. 1).[1] For the next three years, with the help of large interventions by the SNB, this minimum exchange rate held. However, in the fourth quarter of 2014 the SNB abandoned its minimum exchange-rate policy in response to the US Federal Reserve's move to 'normalize' its own monetary policy by increasing the targeted federal funds rate of interest, and the European Central Bank's move to further expand its liquidity-providing interventions to support the euro-area banking sector. On 15 January 2015, the Chairman of the Governing Board of the SNB justified the SNB's decision to discontinue its minimum exchange rate on grounds that

> divergences between the monetary policies of the major currency areas have increased significantly – a trend that is likely to become even more pronounced. The euro has depreciated substantially against the US dollar and this, in turn, has caused the Swiss franc to weaken against the US dollar. In these circumstances, the SNB has concluded that enforcing and maintaining the minimum exchange rate for the Swiss franc against the euro is no longer justified. (Jordan 2015, p. 1)

The new SNB policy stance discontinued the minimum exchange rate and replaced it with a negative interest-rate policy. The argument was that such a floor was 'no longer justified' owing to the weakening of the Swiss franc against the US dollar. Instead, an acceptable exchange rate could be sustained by a negative interest rate, which induces agents to reduce their demand for Swiss-franc deposits in favour of other currencies.

This belief in negative interest rates as the right policy instrument for reducing Swiss franc overvaluation and managing domestic demand has been repeated several times by each of the three current members of the SNB Governing Board. The Chairman claimed that 'the laws of economics do not change significantly when interest rates turn negative' (Jordan 2016, p. 2). The Vice Chairman has further emphasized that the SNB negative interest-rate policy is effective, in his view, since

> [t]hanks to the introduction of the negative interest rate in Switzerland, the original interest rate differential to the euro area could at least partially be restored. This – along with the SNB's willingness to intervene in the foreign exchange market – has helped to relieve pressure on the Swiss franc. The effect of the negative interest rate on the exchange rate is currently playing a decisive role in enabling the SNB to fulfil its monetary policy mandate. (Zurbrügg, 2016, p. 4)[2]

This paper argues that the negative interest-rate policy in Switzerland has resulted in policy that is inconsistent with the SNB's policy mandate, contrary to the claims of the SNB Governing Board members. Article 5, paragraph 1 of the Federal Act of

1. As another member of the SNB Governing Board explained, '[t]he excessive appreciation of the Swiss franc is a monetary problem, because it carries the risk of deflation. So it is a problem that has to be dealt with through monetary policy' (Zurbrügg 2012, p. 11). This is why the exchange rate has been the focus of the SNB policy: 'With interest rates close to zero and inflation forecasts signaling deflationary risks, the minimum exchange rate helped us avoid a dangerous tightening of monetary conditions, in a situation where we had exhausted the options available under conventional monetary policy' (Jordan 2013, p. 2). This is so much so that, when announcing that the SNB discontinued its minimum exchange rate as of 15 January 2015, the Chairman of its Governing Board maintained that 'the SNB will continue to take account of the exchange rate situation in formulating its monetary policy in future. If necessary, it will therefore remain active in the foreign exchange market to influence monetary conditions' (Jordan 2015, p. 2).
2. See also Maechler (2016, p. 4), who argues that '[t]he negative interest rate and the SNB's willingness to remain active in the foreign exchange market are thus two mutually reinforcing measures, which are having the desired effect'.

3 October 2003 commands that '[t]he [Swiss] National Bank shall pursue a monetary policy serving the interests of the country as a whole'. Beyond ensuring price stability taking due account of economic developments, the SNB 'shall contribute to the stability of the financial system' (art. 5, para. 2, Federal Act of 3 October 2003; see Federal Council 2003). The paper argues this mandate has been clearly disregarded by the SNB as the negative interest-rate policy contributes to financial instability, particularly with regard to the Swiss mortgage and real-estate markets.

Section 2 presents the alleged merits of negative rates of interest as a policy for addressing the macroeconomic concerns associated with Swiss-franc overvaluation. Section 3 explains why the SNB policy stance is wrong and is a major contributing factor to financial instability of the national economy. Section 4 suggests replacing the negative interest-rate policy of the SNB with a very small Tobin tax on all Swiss-franc purchases in the foreign-exchange market. This decision will have to be taken by the Swiss federal parliament, but the SNB can provide relevant insights on this subject matter, provided that it abandons its orthodox approach to money and monetary policy, acknowledging that both have large and long-lasting impacts on the whole economic system rather than just on some nominal variables as in the monetarist perspective (see, for instance, Summers 2015; Palley 2016; Rochon and Rossi 2018; Rossi 2019). The conclusion in Section 5 summarizes the main critical arguments briefly.

2 THE ALLEGED MERITS OF NEGATIVE INTEREST RATES

Given that the Swiss economy is small and significantly dependent on foreign trade, the franc exchange rate is an important economic variable. Consequently, the SNB has to consider how its monetary policy stance as regards interest rates affects the exchange rate. That is why Jordan (2016, p. 6) maintains that 'without negative interest rates, the Swiss franc would have appreciated even more strongly, [economic] growth would have collapsed, accompanied by even lower inflation, and unemployment would have risen'. This amounts to saying that the negative interest-rate policy is instrumental in achieving the SNB mandate, which, in practice, consists of making sure that the rate of inflation is close to but below 2 per cent yearly. Indeed, the SNB neglects the remainder of its official mandate, because it does not really consider how monetary policy can reduce unemployment or how monetary policy can be designed to contribute to the stability of the financial system (see Rossi 2009).

The idea of setting a negative rate of interest by monetary authorities can be traced back to Gesell (1916 [1958]), who argued that a tax on bank deposits could provide a stimulus to both consumption and investment once the policy rate of interest is at its zero lower bound (see Ilgmann and Menner 2011; Panzera 2015b). Households would prefer to increase their consumption expenditures – hence their utility – than pay interest on their savings held in the form of bank deposits. Firms will also be induced to invest more if commercial banks pass on to their borrowers the reduction of interest rates imposed by the central bank – on the orthodox assumption that firms' investment depends negatively on interest rates and is independent of the business cycle (that is to say, independently of effective demand; see Palley 2018 for a critical appraisal).

In a situation characterized by deflationary pressures or outright deflation in the market for produced goods and services, a negative rate of interest can stimulate aggregate demand and contribute compensating inflationary pressures that allow the central bank to hit its price stability goal in the product market (Jordan 2016, p. 4). For a small

open economy like Switzerland, the inflationary effect of negative interest-rate policy operates in part through the exchange-rate channel, providing that its partner countries do not also impose negative rates and thereby hold interest-rate differentials across countries unchanged. According to Jordan (ibid., p. 4),

> [l]ower interest rates, other things being equal, make the Swiss franc less attractive as an investment currency. The franc loses value, which makes Swiss goods cheaper abroad, and leads to a rise in net exports. This in turn raises GDP and inflation in Switzerland. Depreciation of the Swiss franc also has a direct impact on inflation because import prices rise.

All in all, the negative interest-rate policy in Switzerland could thus be considered appropriate to achieve the SNB mandate, because it is able to guarantee price stability in the market for produced goods and services through both the interest-rate and exchange-rate channels of monetary policy interventions – ignoring the issues regarding financial (in)stability that we will point out in the next section. In this regard, the negative interest-rate policy does not differ from 'conventional' monetary policy aimed at price stability through separate 'transmission channels' as pointed out above.

The bottom line of the arguments put forward by supporters of negative interest rates is that 'taking a policy rate into negative territory has a similar effect, in terms of transmission to other interest rates, to cutting a policy rate in positive territory' (ibid., p. 6). However, the empirical evidence in the Swiss case does not support this argument. Furthermore, as shown in the next section, the argument is also flawed according to macroeconomic logic.

3 THE ACTUAL SHORTCOMINGS OF NEGATIVE INTEREST RATES

The negative interest-rate policy adopted by the SNB to address the negative effects of the Swiss-franc overvaluation in the domestic economy has not delivered the promised results as regards both the Swiss-franc exchange rate and Switzerland's economic performance. It is possible that things might have been worse if the SNB had not imposed a negative rate, and Jordan (2016, p. 6) emphasizes that 'it has helped to ensure that the Swiss franc has not strengthened further despite heightened uncertainty, for example in the wake of the British EU referendum'. However, that is not the proper criterion of assessment. It is not simply an issue of averting further appreciation of the Swiss franc's exchange rate, but also a matter of ensuring this is done in an efficient manner without destabilizing side-effects. Indeed, a brief glance at Figure 1 is enough to see that the SNB negative interest-rate policy was actually quite ineffective and there was significant appreciation of the franc exchange rate in the period after the switch to the negative interest-rate policy.[3]

Figure 1 shows the evolution of the Swiss-franc exchange rate against the euro (in direct quote form). After 1 January 2008 there was a strong and rapid appreciation

3. It would be interesting to know what would have happened to the Swiss-franc exchange rate if the SNB had not adopted a negative interest-rate policy, but this question cannot really be answered, since there is no empirical evidence to provide counterfactuals. In light of the fact that the SNB had previously been increasing both the money supply and its own balance sheet to a very large extent as a result of its foreign-exchange market interventions, one might imagine that several market rates of interest on financial assets denominated in Swiss francs would have become negative in any case, if the SNB had decided to continue its foreign-exchange purchases instead of introducing a negative interest rate on banks' balances along with it.

Source: Thomson Reuters Datastream (2018).

Figure 1 Evolution of the CHF/EUR exchange rate, 2008–2018

until the SNB introduced a minimum exchange rate (1.20 Swiss francs for 1 euro) on 6 September 2011. Thereafter, in the period when this floor was operative (6 September 2011–15 January 2015), with the help of large foreign-exchange purchases, the SNB kept the market exchange rate of the Swiss franc against the euro slightly above the floor. During this period, foreign-exchange interventions were usually accompanied by a strong communication policy aimed at convincing market participants about the SNB's unconditional commitment to the floor. On 15 January 2015, the SNB surprised market participants with its unexpected announcement that it was discontinuing the exchange-rate floor against the euro. That triggered an immediate and very strong appreciation of the Swiss franc against the euro, which the negative interest-rate policy of the SNB did not fully offset. Hence, while the negative rate of interest may have prevented even further additional exchange-rate appreciation, it did not restore the exchange rate to the level prevailing prior to the introduction of a negative interest rate (see Figure 1). A similar argument holds with regard to the real effective exchange rate of the Swiss franc (Figure 2), whose evolution since 2008 closely parallels the evolution of the Swiss franc/euro exchange rate.

Of course, one could counterargue that the SNB may still reduce its policy rate into the negative domain, not least in order to re-establish the interest-rate differential (about 100 basis points) that prevailed between Switzerland and the euro area before the latter entered into its own systemic crisis (see Rossi 2013 for some elaboration on that crisis). However, such an argument would miss the fact that the SNB's negative interest-rate policy has a series of negative real and financial effects, and lowering the interest rate further into negative territory would exacerbate these effects (see Hannoun 2015; Jobst and Lin 2016; Palley 2016; Borio and Hofmann 2017). Let us expand on this point briefly.

As regards economic activity, the negative interest-rate policy has contributed to strong and persistent inflationary pressures in the Swiss real-estate market, as illustrated by the real-estate bubble index that UBS publishes on a quarterly basis (see UBS 2018). This is the result of various converging decisions induced by the SNB

Source: International Monetary Fund (2018).

Figure 2 Evolution of the CHF real effective exchange rate, 2008–2018 (2010 = 100)

negative interest rate. As regards mortgage loans, the rate of interest charged by banks has been at historically low levels owing to the SNB monetary policy stance:[4] banks are keen to lend to Swiss households looking to become home-owners because renting has become more expensive than paying interest and amortization costs of a mortgage loan. For banks, mortgage loans are a highly attractive business in terms of risk/return perspectives given current financial conditions across the global economy, the fact that real-estate prices in Switzerland are on a long-term rising trend, and given current (June 2018) uncertainty in global financial markets owing to geopolitical risks. In this regard, the Swiss real-estate market is an interesting investment opportunity for pension funds as well as insurance companies, which expect to be able to obtain higher yields from this market than from financial markets for a variety of low-risk businesses. However, such investors will quickly sell their real-estate holdings once financial markets offer a higher return on other investments. If that happens, it will put a strong downward pressure on real-estate prices, raising the loan-to-value ratio dramatically for many middle-class home-owners. That could then induce banks to require from their mortgage-loan holders a more rapid amortization of their loans, putting a relevant fraction of them into a difficult financial position, and possibly compelling them to sell their houses. That could provoke a Swiss housing crisis, which could damage a variety of banks as well as the 'real' sector of the economy in Switzerland.

Indeed, the ongoing overheating of the Swiss real-estate market has already prompted the SNB to propose to the Swiss Federal Council the introduction of a countercyclical capital buffer for domestic banks with respect to the mortgage loans they

4. By contrast, banks in Switzerland have increased the interest rate they ask small and medium-sized firms to pay on their loans, since they have to pay a tax on their deposits at the SNB and are reluctant to charge a negative rate of interest to all their customers' deposits, in order to avoid massive withdrawals of the latter, particularly by middle-class depositors.

grant on the residential property market in Switzerland (see Swiss National Bank 2013; 2014). Together with the stricter rules that Swiss banks decided to adopt in a self-regulation effort to avoid further hikes in housing prices, these framework conditions are meant to be enough to avert a housing crisis similar to, or even worse than, the crisis that burst in the Swiss real-estate market at the end of the 1980s. That earlier crisis caused a number of bank failures and gave rise to a 'lost decade' for the Swiss economy in the 1990s. In fact, despite banks' legal obligation 'to hold a countercyclical capital buffer amounting to 2% of their risk-weighted, direct or indirect mortgage-backed positions secured by residential property in Switzerland' (Swiss National Bank 2014, p. 3), and despite the self-regulatory decision to shorten the amortization period for residential mortgage loans (SwissBanking 2014), Switzerland may still confront a future housing crisis.[5]

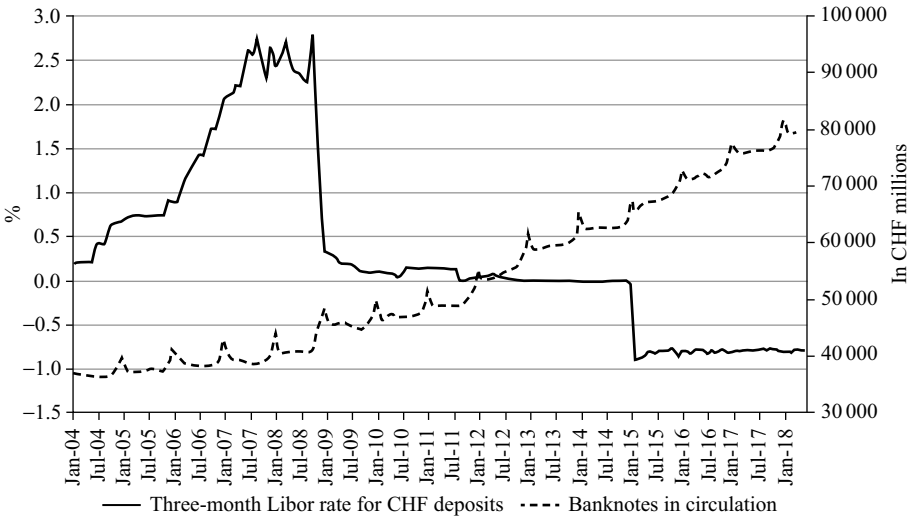
Such a crisis can occur even though the policy rate of interest remains at a historically low level (in the negative domain), owing to problems that could affect the labour market. Indeed, the Swiss-franc overvaluation has been used as an argument to put downward pressure on wage levels of middle-class workers and to reduce the labour force in a number of small and medium-sized firms in Switzerland, notably in the export sector, including tourism activities, and in the retail sector, where a large number of food and non-food shops have been suffering from foreign competition, particularly in those Swiss cantons that are close to the country's border (Rossi 2011).[6] Though SNB monetary policy has reduced job loss from Swiss-franc appreciation and domestic deflationary conditions, that same outcome could have been achieved more efficiently via fiscal policy interventions which would have avoided the above adverse impacts of negative interest-rate policy on the real-estate market.

Furthermore, as regards financial markets and institutions, the negative interest-rate policy of the SNB is also problematic for financial stability. That is because it induces financial market participants to chase yield and engage in riskier activities as a way of avoiding the penalty of negative interest rates. Those forms of behaviour can easily become a major concern for the whole financial system, especially as many banks and non-bank financial institutions have the same 'business model'. This pattern of behaviour also afflicts non-financial institutions (the 'real' business sector) and individuals who have the same incentive to seek higher yields and avoid the penalty of negative interest rates on bank deposits. Moreover, this monetary policy stance pushes an increasing number of deposit holders to withdraw large amounts of their deposits from banks, and to store the corresponding savings in a safe, where a growing stock of banknotes is kept with all (storage and opportunity) costs that ensue for their owners. As Figure 3 shows, there is clearly a negative correlation (and perhaps even a causal relationship) between the strong reduction of Swiss interest rates (notably, the three-month Libor) and the increase of banknotes in circulation in Switzerland.

With respect to Swiss GDP, the amount of Swiss banknotes has been increasing since the eruption of the global financial crisis in 2008. A larger number of 1000

5. For an overview and discussion of macroprudential policies, see Financial Stability Board et al. (2011), Galati and Moessner (2013) and Panzera (2015a).

6. This shows that monetary policy should be considered as part of the macroeconomic policy mix, where fiscal policy would also have to be part of the picture, aiming at enhancing economic development as well as maximum employment rather than balancing the budget of the general government sector. We owe this remark to an anonymous referee.



Source: Swiss National Bank (2018).

Figure 3 Swiss banknotes in circulation and the three-month Swiss-franc Libor rate, 2004–2018

Swiss-franc notes are being hoarded rather than spent across the domestic economy – probably due to SNB negative interest-rate policy, which induces agents to withdraw their savings from their bank deposits in order to put them in a safe (within the same bank or elsewhere). This higher demand for cash involves storage costs. It also increases agents' propensity to avoid paying taxes, as a number of large-value transactions are paid in the form of cash rather than through bank transfers. As a result, the SNB may be obliged to abolish cash – beginning with the 1000 Swiss-franc note – in a (likely unsuccessful) attempt to reduce tax evasion and to reduce demand for Swiss banknotes so that negative interest-rate policy contributes to reducing the Swiss-franc overvaluation.[7]

In sum, the empirical evidence and macroeconomic analysis suggest that the SNB's negative interest-rate policy is not up to the task, and is also a contributory factor to financial instability in Switzerland. The next section presents an alternative policy proposal, which can avoid both the macroeconomic costs and shortcomings of the SNB negative interest-rate policy.

7. To be sure, tax avoidance is more the result of large-value transactions paid through bank transfers than in the form of cash. Further, even assuming the abolition of cash (particularly the 1000 Swiss-franc note) were to take place in Switzerland, the constraint that obliges any economic agents to pay by disposing of a bank deposit does not suffice to ensure that the negative interest-rate policy of the SNB can be really effective in putting downward pressure on the Swiss-franc exchange rate. In light of the contingent situation and medium-run perspectives of the global economy, particularly across the euro area, it is very likely that a number of economic agents in this area are going to buy Swiss francs against euros.

4 A TOBIN TAX ON ALL SWISS-FRANC PURCHASES

Tobin (1974) is well known for his proposal to introduce a small tax on all transactions in the foreign-exchange market, to reduce speculation[8] and its destabilizing impacts on economic activity. Tobin (1978, p. 153) starts with the observation, already clear in the late 1970s, of 'excessive international – or better, intercurrency – mobility of private financial capital'. To counter the 'frequently painful real internal economic consequences' of exchange-rate speculation, Tobin (ibid., pp. 154–155) proposed 'an internationally uniform tax on all spot conversions of one currency into another, proportional to the size of the transaction'. As he pointed out, this tax 'would particularly deter short-term financial round-trip excursions into another currency' (ibid., p. 155). The original argument to introduce a Tobin tax is therefore about reducing trading volatility and speculation in foreign-exchange markets. It is not meant to stabilize the economy, so that it cannot be considered as a monetary policy instrument *per se*. This tax would however have some positive impact on fiscal revenues, thereby contributing to stabilizing the economy indirectly. To be sure, a Tobin tax on all Swiss-franc purchases would stabilize the relevant exchange rate (probably at a lower level), thus contributing to supporting economic activity across Switzerland. 'The impact of the tax would be less for permanent currency shifts, or for longer maturities' (ibid., p. 155), which would therefore affect foreign direct investment less, because the latter is the result of business strategies rather than mere speculation. The same applies to foreign trade, which is certainly not reduced by a very small tax on foreign-currency purchases to pay for Swiss exports – in fact, the latter could be enhanced if the Tobin tax induces a Swiss-franc depreciation. Of course, part of the Swiss financial industry could suffer from such a tax, and is likely to shift part of its own business abroad or into other market segments (which might reduce the employment level across the domestic financial sector and make the global financial system more fragile).

In Tobin's (ibid., p. 159) view, '[t]he tax would apply to all purchases of financial instruments denominated in another currency – from currency and coin to equity securities'. Notwithstanding the 'difficulties of administration and enforcement' of this tax, as well as 'the distortions and allocational costs that can be attributed to tariffs' (ibid., p. 159), Tobin argued that these costs 'are small compared to the world macroeconomic costs of the present system' (ibid., p. 159). To these costs, as he rightly pointed out (ibid., p. 159), one must add the burdens of much more damaging policy measures – such as negative rates of interest or an exchange-rate floor, as illustrated by the Swiss case – designed to protect the politically favoured sectors of the national economy, to the detriment of the general interest of the whole economic system and the majority of its stakeholders.

In a liberal country like Switzerland, the introduction of a new tax is a politically sensitive matter. One way of building political consensus regarding a small Tobin tax on all Swiss-franc purchases is to have the SNB introduce such a tax in order to collect funds for a provision against foreign-exchange losses, to which the SNB is heavily exposed because its foreign-exchange reserves have mushroomed and now exceed Swiss GDP. The SNB can easily explain this provision as being needed

8. As Kaldor (1939, p. 1) cogently put it, speculation 'may be defined as the purchase (or sale) of goods with a view to re-sale (re-purchase) at a later date, where the motive behind such action is the expectation of a change in the relevant prices relatively to the ruling price and not a gain accruing through their use, or any kind of transformation effected in them or their transfer between different markets'.

for macroprudential policy reasons, thereby avoiding any political turmoil or unnecessarily long parliamentary discussions. Once this first step is carried out successfully as regards the Swiss-franc exchange rate against the euro, the Swiss Confederation could obtain from the SNB part of the income collected with the Tobin tax, using the income to finance other economic policy priorities.

Introducing a small Tobin tax on all Swiss-franc purchases in the foreign-exchange market represents the best solution for addressing a number of issues that have been damaging the Swiss economy since the euro-area crisis erupted in 2009. It will allow several objectives to be achieved while minimizing the relevant costs for the economy as a whole. The 'announcement effect' from committing to the introduction of such a tax will immediately reduce upward pressure on the Swiss-franc exchange rate. Additionally, the Tobin tax will:

1. diminish SNB balance-sheet risk by reducing the need for large asset purchases aimed at putting downward pressure on the Swiss-franc exchange rate;
2. diminish tendencies for increased financial fragility in the Swiss banking sector which result from the chase for yield to escape the penalty of negative interest rate; and
3. diminish pressures for a price bubble in the Swiss real-estate market caused by negative interest-rate policy.

A small Tobin tax on all Swiss-franc purchases will also allow the Swiss Confederation to collect a fiscal revenue that can be used to finance domestic policies. Note that because the Swiss franc is a strong currency and the goal is to diminish upward pressure on the exchange rate, the tax is viable even though it is not introduced in the rest of the world. When it comes to spending those funds, the political authorities in Switzerland could introduce criteria that allocate those funds for socially desirable goals and reward socially desirable behaviour. Those criteria should reward those business activities that contribute to sustainable development – be it in terms of clean technologies, environment-friendly processes, or labour-preserving (that is, job-providing) activities, in light of global issues such as climate change and the so-called 'fourth industrial revolution' induced by automation, robotization, digitalization and the like.

Given the quantity of Swiss francs that are purchased in the foreign-exchange market on a daily basis (equivalent to US$243 billion), and particularly as regards the euro (equivalent to US$54 billion) according to the most recent survey by the Bank for International Settlements (2016), the Swiss Confederation can introduce a very small Tobin tax – equal to 0.01 per cent – on all Swiss-franc purchases against the euro, aiming at setting up a financial facility that could support small and medium-sized Swiss firms that have been injured by Swiss-franc appreciation since the euro-area crisis erupted at the end of 2009. Considering the figures published by the Bank for International Settlements (2016), the fiscal revenue raised by such a Tobin tax would amount to 1.2 billion Swiss francs yearly (assuming 240 working days in the relevant calendar year). After compensating the banking sector for the costs involved in collecting this Tobin tax, the net amount available to support the 'real' business sector in Switzerland would be around 1 billion Swiss francs. This amount would not stem from negative rates of interest, which penalize Swiss depositors who are not responsible for the Swiss franc's appreciation. Indeed, instead of focusing on a stock magnitude (such as bank deposits), the appropriate way to curb Swiss-franc appreciation is to focus on flow magnitudes, in particular purchases of Swiss francs in the foreign-exchange market. The latter are the cause of the franc's appreciation.

A critique often raised against the Tobin tax is its alleged inefficiency, in the sense that it can be avoided by purchasing Swiss francs 'offshore' through banks located beyond the Swiss borders, say in London or Hong Kong. Two possibilities may exist in this regard. One is that the non-resident bank has a deposit in a bank located in Switzerland which it transfers to another non-resident agent – in which case this transfer through the latter bank will be charged with the Tobin tax. Alternatively, the non-resident bank obtains a Swiss-franc deposit through the correspondent banking network, say through another non-resident bank, which owns a deposit in a bank located in Switzerland. In the latter case, the purchase of Swiss francs avoids the Tobin tax, but the transaction is more expensive for the agent purchasing the Swiss francs because it involves a correspondent bank whose costs must be paid for by the agent buying Swiss francs. In that case, the Tobin tax is less than those transaction costs. Consequently, the theoretical possibility of circumventing the Tobin tax on Swiss-franc purchases via the global correspondent banking network is not relevant in practice.

5 CONCLUSION

Switzerland could be the first country in the world to implement a Tobin tax on all purchases of its national currency in order to promote domestic financial stability. It can do this unilaterally because the Swiss franc is a strong currency that is subject to appreciation pressures that the policy authorities do not want. From a monetary policy standpoint, the tax can replace negative interest-rate policy, which has had serious adverse financial-stability impacts. If outright replacement of negative interest-rate policy with a Tobin tax is deemed too risky, the Swiss political authorities can adopt a step-by-step approach whereby they collect a Tobin tax while still retaining negative interest-rate policy. That would still relieve upward pressure on the franc and thereby diminish the pressure for negative interest rates. If this combined policy stance proves to be successful, the policy authorities could subsequently move to fully abandon negative interest-rate policy, which this paper has argued has serious adverse financial-stability consequences.

As in any economic policy decisions, the advantages and disadvantages of a Tobin tax are distributed unevenly across the economic system. However, a political decision must always and everywhere take into account the general interest of the whole set of stakeholders rather than some particular interests that are well defended in the political arena. Negative interest rates are a burden for the economy as a whole – and moreover do not really impact on either the origins or consequences of the Swiss franc's strength in the foreign-exchange market. Recognizing that is the first step in starting to consider abandoning negative interest-rate policy, and thinking about the advantages of a Tobin tax on all Swiss-franc purchases. As Machlup (1963, p. 259) put it, 'bank managers and others with practical experience ought to stop regarding anything that has never been tried as impractical, and the theorists ought not to give up attempts to advance their favorite schemes just because the bankers refuse to listen'. In particular, central bankers, and the SNB Governing Board members first and foremost, should rethink monetary policy anew, recognizing that the latter is not neutral on 'real' magnitudes and contributing to the revamping of fiscal policy to ensure that a policy mix is put into practice to address real-world economic issues appropriately and for the common good.

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