Safe havens in Europe
Switzerland and the ten dwarfs

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Abstract

Eleven safe havens exist in Europe providing offshore banking and low taxes. Ten of these states are very small while Switzerland is moderately small. All 11 countries are richer than their large neighbors. It is shown that causality is from small to safe haven to wealth, and that theoretically equilibriums are likely to exist where a certain regulation is substantially lower in a small country than in its big neighbor. This generates a large capital inflow to the safe havens. The pool of funds that may reach the safe havens is shown to be huge. It is far in excess of the absorptive capacity of the safe havens, but it still explains, why they are rich. Microstates offer a veil of anonymity to funds passing through, and Switzerland offers safe storage of funds.

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1. Introduction

This essay explains the many safe havens in Europe. No commonly accepted definition exists of an **SH**, safe haven, but the actual cases are well known. Table 1 (overleaf) lists Switzerland and 10 much smaller countries as the **ESH**s, the European Safe Havens.[2] The various definitions may be summarized as: An SH is a country that makes substantial money by exporting a problematic *SH-good* to neighboring countries, where it is restricted or illegal. The SH-export takes place by keeping a restriction, *r*, lower than in the neighbors.[3] The largest SH-product is *offshore financial services*, which protect funds from taxes levied in the land where the money are earned, but gambling and the sale of cheap booze may also be mentioned.

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2. When visiting one it is often visible to the naked eye that substantial wealth is being generated in an unusual way. San Marino is not only one of many off-the-map hilltops in Italy; it is a place where Ferraris are more plentiful than goats. And even a five minute stroll down the main street in Vaduz (Liechtenstein) reveals that the main national industry is financial services.
3. If *A* is tax-protected banking, *r* is the rate of protection against the taxman in the country of origin; if *A* is booze, *r* is the sales tax; if *A* is gambling, *r* is the range of permitted products, etc. The rates are scaled so 'low' means that it generates a substantial export.

1.1   A preview of the content: Causality and offshore finance

The essay deals with two main points about the safe havens: (i) Why do they come about? This deals with causality. (ii) How do they fit into the financial structure of the continent? This contains a size-puzzle: The pool of offshore finance is far in excess of the absorptive capacity of the SHs. Two sections deals with each point:

The first two section deals with (i) and show that it is a tempting possibility for a small country to be an SH. Section 2 takes off from a survey of a few basic data for all European countries. The analysis proves the causal chain empirically: From small to safe haven to rich. Section 3 presents a theory to explain this causal chain. Equilibriums exist for the SH-regulation, where the small country keeps it 'too' low, while it's large neighbors do not to react even if they *resent* the SH-policy. It is also explained why dependencies are often 'allowed' to be safe havens.

The following two sections consider the size-puzzle: Section 4 looks at the size of the *pool* of funds seeking shelter by means of offshore finance. The uncertain estimates cited are all very large. The pool is a stock, but we also bring estimates of the flow of funds and on the annual accumulation of funds in the ESHs. It is much smaller than the inflow.

Section 5 deals with the effects of the SH-policies on the EHS economies. It shows that the inflow is far in excess of the absorptive capacity for finance in the ESHs. Thus, the microstates mainly provide short-run *veils of anonymity* for funds passing through, while Switzerland also provides *long-run storage* of funds either in the country itself or as a guarantor for funds invested abroad. It stresses the difference between the exchange rate regimes of the 10 dwarfs and Switzerland, which is about 4 times larger than the 10 small countries added together.

Section 6 summarizes and considers the pressures on the safe havens to make them comply with the regulations of other countries. A background paper (Paldam 2013b) documents the data and reports a number of additional calculations.

1.2   The literature: Where does the present essay fit in?

The essay draws upon several literatures that are not normally referred to in the same paper: One literature deals with the relation between the size of nations and their income; see e.g. Easterly and Kraay (2000). This literature is surveyed in Alesina *et al.* (2005). The main conclusion is that small nations do as well as large ones if they are open. In political science the main work on small states is still Kazenstein (1985) that disregards microstates and concludes that the small European states do better than the larger states due to corporatist institutions.[4]

A separate literature looks at microstates and concludes that they do well, especially if they are dependent; see Armstrong and Read (1998, 2000) and Baldacchino (2004). The literature on microstates overlooks (deliberately?) that a great many are safe havens. Little has been written on the individual European microstates, except in reports by their own economic authorities, which certainly downplays the safe haven aspects of their success. The literature on Switzerland is

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4. Christoffersen *et al.* (2013) finds that the institutions in two of the most successful small states in Europe (Denmark and Switzerland) are thoroughly different. If they are both corporatist the concept is so wide as to be (almost?) void.

surveyed in Christoffersen (2013). I have not seen a causality analysis as the one given in section 2, while various versions of the model in section 3 have appeared; see e.g. Slemrod and Wilson (2006).

The literature on offshore finance are either (positive) practical guides or (negative) descriptions of the way money moves, how it can be regulated, and why it should be regulated. A recent (negative) book surveying the older literature and discussing the data is Palan *et al*. (2010), see also the references to Schneider and Henry in section 4. It appears that at the level of precision attempted in section 4 most studies reach numbers much like the ones I present.

The analysis of the absorptive capacity and the transfer problem is once again covered by separate literatures; see Paldam (2013a) for a recent survey.[5] The literature on offshore finance does not discuss the transfer problem.

2. The causal chain: From small to safe haven to rich

Table 1 is the first link in the chain: Safe havens come about in old and small countries. Section 2.1 looks at some correlations, while Section 2.2 shows that it pays to be a safe haven.

Table 1. The 11 ESHs, European Safe Havens, in order of population size

	Country	Population	Recognized
Microstates			
(1)	Gibraltar	28,956	1713
(2)	Monaco	30,539	1419
(3)	San Marino	31,817	301 and 1631
(4)	Liechtenstein	35,236	1719
(5)	Guernsey	65,068	1204
(6)	Isle of Man	84,655	1765
(7)	Andorra	84,825	1278
(8)	Jersey	94,161	1204
Small countries			
(9)	Luxembourg	503,302	983 and 1815
(10)	Cyprus	820,020	1878 and 1960
The largest			
(11)	Switzerland	7,639,961	1353 and 1848

Note: 'Population' in 2010. 'Recognized' is the year when the country was internationally recognized. In some cases two years are listed. All cases are preceded by a complex history. Sources: Wikipedia (URL ref.)[6] and Gyldendal's Encyclopedia (URL ref.).

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5. The theory of the transfer problem goes back to the discussions between Keynes and Ohlin in 1929. Today is also known as Dutch Disease.
6. Note that '(URL ref.)' means that the home page address is given in the references.

2.1   The main pattern of correlation in the data

Europe has 54 fully and partly independent *countries* with enough policy autonomy to develop into safe havens. All sources I have found classify at least 11 of these countries as the ESHs, European Safe Havens (see Paldam 2013b). They are listed in Table 1. They are all small, eight are even microstates, and all are DCs, developed countries.

The table gives the population size and the year of international recognition. However, the countries have older roots. By and large the ESHs are as old as other European countries, and the ESHs came into independence long before they became safe havens. None of the countries came about as a result of their safe haven policies.

All, except Cyprus,[7] were established well before the Napoleonic wars and modern economic growth. As regards Cyprus, it is worth noting that Greek debt crisis (since 2009) did spill over to Cyprus, though only in 2011/12. The Euro Countries did provide a loan package, but they took the opportunity to impose restrictions on the banks of Cyprus that seem likely to end the SH-policies. It illustrates the *resentment* of other countries towards the ESHs.

Data for most microstates are scarce and they are routinely excluded in international statistics, but we always know the population, area and national status. Also, the CIA World Factbook (URL ref.) reports the income rank for 2010 for all 11 safe havens.

The six series used for Table 2 have non-normal distributions, so I use a rank correlation technique to calculate the table. It has 15 different entries of which 11 are significant. The two measures of size: *Area* and *Population* are so correlated (0.86) that they tell the same story. *Safe havens* are small, often *dependent*, not *post-com*munist and have *high income*.[8] *Post-com* countries are poor and not dependent, so the variables have some collinearity.

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7. Cyprus has a long recorded history. It was an independent kingdom before it became Venetian in 1489, Ottoman in 1571 and British in 1878. In 1960 it became independent once again. Offshore banking activities started in the 1980s due to the civil war in Lebanon that caused some banking activity to seek a new home. After the fall of communism in 1990 Cyprus became an important center for the offshore activities of Russian business.

8. This analysis is confirmed by a set of statistically dubious regressions reported in Paldam (2013b). The main pattern is as follows: *Safe-haven* is explained by small *size, dependency* and not *post-com. Income* is explained by *safe-haven* and not *post-com*, but not by *size* or *dependency.*

Table 2. Matrix of Spearman's rank correlation coefficient

	Safe haven	Area	Population	Post-com	Dependent	Income
Safe haven	1	**-0.53** (0.0)	**-0.64** (0.0)	**-0.53** (0.0)	**0.39** (0.4)	**0.58** (0.0)
Area	**-0.53** (0.0)	1	**0.86** (0.0)	0.12 (40)	**-0.45** (0.1)	-0.26 (5.4)
Population	**-0.64** (0.0)	**0.86** (0.0)	1	0.17 (23)	**-0.44** (0.1)	**-0.29** (3.5)
Post-com	**-0.53** (0.0)	0.12 (40)	0.17 (23)	1	**-0.29** (3.6)	**-0.82** (0.0)
Dependent	**0.39** (0.4)	**-0.45** (0.1)	**-0.44** (0.1)	**-0.29** (3.6)	1	**0.39** (0.4)
Income	**0.58** (0.0)	-0.26 (5.4)	**-0.29** (3.5)	**-0.82** (0.0)	**0.39** (0.4)	1

Note: Calculated for all 54 European countries. The sign of the correlation to Income is reversed as the lowest income rank is for the richest country. The p-value in brackets is the probability (in %) that the said correlation is random. Non-random correlations are bolded. Safe haven, Dependent and Post-communist has two or three values only. Sources - see Paldam (2013b).

2.2 Causality: Safe havens come about in small states and they become wealthy

From Table 1 we know that SHs are old and small. Table 2 confirms that they are small. Thus, causality must start at being a small country. Tables 3 and 4 are causality tests that assume that in the absence of the safe haven policies the income of the ESH-countries would be the average of its surrounding neighbors.[9] In some cases it is difficult to choose the neighbors as explained in the note to the table.

The tables compare a small SH-country and its neighbor(s) that are always larger.[10] Consequently, the modeling in section 3 considers a (S, N)-pair of countries, where $S < N$. The theory shows that SH policies are more likely to be welfare enhancing in S than in N.

The test in Table 3 shows that the safe havens are richer than their neighbors by 20.1 places in income rank. This is substantial and statistically significant. It is also robust to the possible changes in the comparison.

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9. Some of the SHs are actually in 'remote' areas that are likely to be relatively poor in the absence of the SH-policy.
10. All neighbors are *much* larger than the SH, except Austria which is only marginally larger the Switzerland.

Table 3. The excess income rank (2010) of the safe havens (in size order) compared to neighbors

Gibraltar	13	Guernsey	9	Luxembourg	4
Morocco	*149*	France	42	Belgium	29
Spain	47	*Jersey*	*5*	France	42
U.K. [a)]	38	U.K.	38	Germany	34
Gain	29.5	Gain	31	Gain	31
Monaco [b)]	41	Isle of Man	21	Cyprus [b)]	62
France	42	Ireland	30	Greece	46
Italy [c)]	43	U.K.	38	Russia [d)]	75
Gain	1.5	Gain	13	*Turkey*	*95*
San Marino	31	Andorra [b)]	14	Gain	-1.5
Italy	43	France	42	Switzerland	19
Gain	12	Spain	47	Austria	22
Liechtenstein	2	Gain	30.5	France	42
Austria	22	Jersey	5	Germany	34
Germany [c)]	34	France	42	Italy	43
Switzerland	19	*Guernsey*	*9*	*Liechtenstein*	*2*
Gain	23	U.K.	38	Gain	16.3
		Gain	35	Average Gain [d)]	20.1
				P-value of t-test	0.21%

Notes: The Gain is the excess rank of the bolded safe haven country compared to the un-weighted average of the neighbors. In several instances it is dubious which 'neighbors' to include – here some possibilities are given. Italics indicate a neighbor that is excluded in the calculation of gain. When SHs are neighbors of each other we disregard the SH-neighbor except when there is a big size difference. (a) Gibraltar is an UK dependency. (b) The income rank differs from the one suggested by Table 4. (c) Monaco is 15 km from the Italian border, and Liechtenstein is 40 km from the German border. (d) Russia is reported to use Cyprus as its main offshore banking center. (e) Normality not rejected by the Shapiro-Wilks W-test. Source: CIA World Factbook.

Table 4 is an alternative causality test. It is done on the income data in the WDI (URL ref.). The latest data for the microstates reported in the WDI are for 2007 and they only cover 8 of the 10 microstates. The ranking implied by Table 4 is somewhat different from the one in Table 3. In most cases it may be explained by the difference in the year considered, but in three cases – Monaco, Andorra and Cyprus – the data are inconsistent.[11]

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11. It is a problem how expatriates are counted in these data. Precisely the same problem applies to bank assets in the financial statistics. It is easy to cite different numbers. It should be handled by the concepts of *national* versus *domestic*, but more categories appear necessary to fully catch what is going on, and few microstates give both data.

Table 4. Excess GNI per capita for safe havens in 2007 in US$

Neighbors		SHs in order as Table 3		Gain in % [b]
Austria	42,500	Monaco	160,180	339.3 %
Belgium	41,440	San Marino	45,930	35.0 %
France	38,900	Liechtenstein	1111,930	138.2 %
Germany	39,440	Isle of Man	48,910	4.8 %
Greece	24,980	Andorra	37,340	3.9 %
Italy	34,030	Channel Isl. [a]	67,960	63.0 %
Russia	7,590	Luxembourg	79,660	99.5 %
Spain	29,400	Cyprus	24,240	48.8 %
U.K.	44,490	Switzerland	59,040	52.5 %
Failed safe havens				
Ireland	48,850	Average gain in %		87.8 %
Iceland	58,780	Binominal sign test [c]		0.2 %

Notes: Atlas Method from WDI (URL ref.) (a) The Channel Islands are Jersey and Guernsey. (b) Compared to same neighbors as in Table 3. (c) Normality of the gain-distribution is rejected at the 5 % level by the Shapiro-Wilks W-test, so the classical t-test is dubious, but it has p-values of 1.7 % anyhow. The binominal test assumes that the probability of + and – is the same and calculate the probability of getting 9 of 9 plusses by chance.

In spite of the data consistency problems, Table 4 confirms the result from Table 3: The income level in safe havens is higher than the one of their neighbors. The result is statistically significant in both tables. Thus, we know that *it pays to be a safe haven*.

This completes the tests of the causality sequence: From small to SH to rich. If you are a small country, it is tempting to become a safe haven as it is likely to make you rich.

Finally, it should be noted that safe havens tend to have a somewhat faster population growth than other countries due to immigration. Andorra has the fastest growing population in Europe. Rich people want to live there for tax reasons, and they generate local production and employment, and thus more immigration.

3. The safe haven model for the (*S, N*) country pair[12]

The purpose of this section is to explain why the causal links found in section 2 are theoretically plausible. The analysis considers two countries: the small safe haven *S* and its big neighbor *N*. It is a partial analysis as it only considers one good, *A*, the SH-good,[13] and one policy variable. *A* is a 'problematic' good that is regulated by the rate, *r*, which has a perceived optimum r^* in a closed economy. It is scaled so that *r* is *reduced* when it causes an export, *A*, of the SH-good.

Section 3.1 formulates the policy problem of choosing *r* by means of the marginal costs, *MC*, and marginal benefits, *MB*, per capita. Section 3.2 looks at the

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12. The analysis is related to the literature on tax-havens, see e.g. Dharmapala and Hines (2006) and Slemrod and Wilson (2006), which is generalized in Slemrod (2008).
13. *A* is produced by a CRS-technology.

outcome when the *MC* and *MB* curves have the most likely form and show that the policy choice may be different in *S* and *N* so that $r^S < r^N \approx r*$. Section 3.3 discusses some less likely possibilities for the two curves. Section 3.4 considers the path into an SH-policy, and finally section 3.5 shows why small dependencies may get away with being an SH.

3.1   The marginal cost and benefits of reducing r in one country, if the other stays in r*

The marginal costs of the domestic production and consumption of the good are seen relatively to *r**, which is taken to be constant. With no trade both countries set their $r \approx r*$, so that $r^S \approx r^N \approx r*$, and on per capita basis the *MC*-curves are the same in both countries:

$$MC = MC(r, r*) = MC(r) \tag{1}$$

The *MC*-curves have the following qualitative properties: $MC(r*) = 0$, and $MC(r)$ rises as *r* falls from *r** to zero. When country *S* lowers *r* it generates an export A^{SN} from *S* to *N*. As the extra A^{SN} is produced in *S* it has the marginal benefit $MB(A^{SN})$ that are:

$$MB^S = MB^S(A^{SN}/S) = MB^S(r) \tag{2, S}$$

$$MB^N = MB^N(A^{NS}/N) = MB^N(r) << MB^S \tag{2, N}$$

The *MS*-curves have the same properties as the *MC*-curve. The *As* are dived by the size of the country as we consider *MB* per capita, so equation (2) is very different for the two countries. Equation (2) assumes that the *trade reaction* to *r* is the same $A^{SN}(r) \approx A^{NS}(r)$. However, the trade reactions are likely to be different: Much fewer people *S* can buy the SH-good in *N* than vice versa, for obvious reasons. Consequently, $A^{NS}(r) < A^{SN}(r)$. This makes the difference between M^{BS} and M^{BN} larger.

The next step in the analysis is to look for intersection points:

$$MC^S(r) = MB^S(r) \qquad \text{and} \qquad (3, N) \ MC^N(r) = MB^N(r) \tag{3, S}$$

To find intersection points the following two sections discuss the form of the *MC*-curve and the two *MB*-curves, and show that it is likely that (3) will have two or even three solutions in *S*, but much less likely that multiple solutions will occur in *N*.
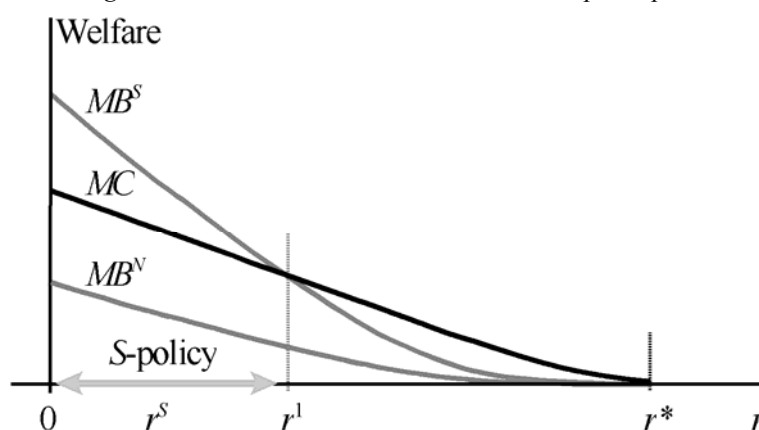
3.2   The most likely form of the two MB and MC curves: Two intersection points in S and one in N

As the qualitatively properties of the two curves (1) and (2) are the same, they must look somewhat alike. Figure 1 shows the two curves. It has costs to buy A abroad, so the MB-curve is likely to be flat around r^*, while the MC-curve may be more linear. Thus we get the picture shown on Figure 1.

The per capita MC-curve is independent of the size of the population, so Figure 1 shows one MC-curve only, but the MB-curve is lower the larger the population. Thus, the MB^S-curve is well above the MB^N-curve, which may even be so low that it 'creeps' along the r-axis.

The two curves intersect at zero for r^* in both countries. It is an equilibrium value for r in both countries as the MC-curve is above the MB-curve to the left of r^* and presumably also to the right of r^*. However, a second intersection point, r^1, occurs in the small country, and $MB^S > MC$ to the left of r^1. It means that welfare is higher in S if $0 < r^S < r^1$, than in r^*.

Figure 1. The curves in the main case – drawn per capita
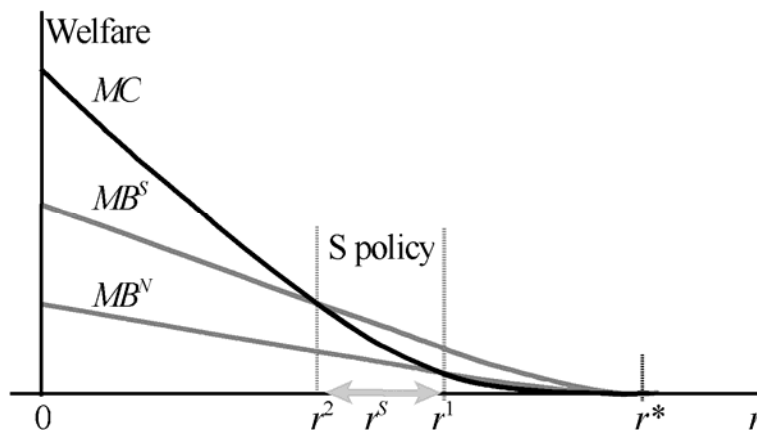

Note: The curves are defined and discussed in the text.

No such point occurs in country N. It does not pay for N to reduce r, even if S does so. However, N will surely resent the SH-policy of S, and if an opportunity arises, N may react in some other way, cf. the Cyprus example in section 2.1.

3.3   Other possible forms of the MB and MC curves

If the MB and the MC curves have exactly the same form, the MB-curve is either fully below or above the MC-curve. So, if S is small, it pays to pursue a safe haven policy for all $r < r^*$.

A more interesting possibility is shown in Figure 2 where the *MC*-curve is the flattest around r^*. Here the safe haven possibility occurs in S between r^1 and r^2 where the MB^S-curve exceeds the *MC*-curve. Here *N* may retaliate up to r^1, but if the relative size of *S* is very small, the distance between the *MB* and the MC^N curves in the interval between r^* and r^1 will be negligible, so it is not worth to reduce r^N below r^* to reap that advantage. Anyhow, if r^s is between r^1 and r^2, it does not pay for *N* to go any further, and there is still an equilibrium with a small safe haven and a large country that gains nothing from reducing its regulation.

3.4   The path to a low level of regulation

To be a safe haven means that a certain regulation is kept lower than in the neighboring countries causing an *A*-export from the country. It is an advantage with some moral ambiguity: The safe haven, *S*, helps people in *N* to free ride on the regulations of their own country.[14]

It is not likely that *S* just decides to go there all of a sudden. Also, it is a rather difficult choice to make in a public debate due to the moral ambiguity. So the typical way to develop into a safe haven is for some event to happen that starts a dynamic path into the policy. One possibility is that *N* participates in a war that causes the regulation to increase for fiscal reasons.

Once the *A*-export increases it expands the *A*-production, and this makes the A-sector relatively large. Thus, the *A*-lobby that wants to keep *r* low becomes relatively strong politically. So politically a successful safe haven policy is self-reinforcing.

The rate *r* may not be the only regulation possible in *S* to prevent the ill effects on the natives of an excessive *A*-consumption. In small countries where everybody knows each other, policies targeting the natives who 'overindulge' in *A* may work.[15]

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14. In the case of gray funds *S*s banks act as a 'fence' for illegal tax evaders in *N*. In the political discourse in *S* this is likely to be a politically incorrect view expressed by very few.
15. A typical case is that Monaco forbids natives to gamble in the Casinos.

3.5 A note on dependent microstates

Four of the European microstates are dependencies of the UK.[16] For simplicity we shall speak of a 'dependency' and a 'mother country'. Dependencies typically feel that they 'deserve' something for their loyalty to the mother country, and the mother country may like to keep the dependency. Also, they are small and the mother country is large, so it can afford a subsidy. Consequently, many of the small dependencies are subsidized – in some cases the subsidy is a substantial part of their GDP. Paldam (2004) presents a model of the dependency/subsidy trade-off for small parts of a large union originally developed to explain the cases of Greenland and the Faroe Islands in the Danish Kingdom.

An alternative to subsidization is to 'allow' the dependency to be a safe haven. It is arguable that since there are enough safe havens anyhow, it does not cost the motherland anything to let their dependency catch a bit of the 'SH-cake' instead of letting somebody else eat it. Also, it saves in subsidies. Consequently, it seems an acceptable deal for both the dependency and the mother country.

Whether dependent microstates become subsidized or offshore financial centers depends upon the dynamics of luck, but also upon location. Jersey is more suited to be a safe haven than the Falkland Islands. Once Jersey became rich it does not qualify for a subsidy. However, the much poorer and very British citizens of the Falklands do.

4. Offshore finance and the annual flow, FSH, to safe havens

The biggest SH-good is offshore finance.[17] The next step in the analysis is to show how large the funds generated by the SH-policies are. I try to assess four very uncertain numbers: Section 4.1 considers (i) the big pool of 'footloose' funds in which the ESHs fish. It is a stock with a corresponding (ii) net annual flow. To compare data for stocks and flows I use a capitalization factor of 10. Section 4.2 tries to separate out (iii) the FSH, which is the part of the annual flow that actually flows to the ESHs. Section 4.3 looks at (vi) the annual net increase in the SHs' financial assets. It is much smaller than the inflow. Table 5 gives some orders of magnitude to have in mind when assessing the size of the financial stocks and flows for 2010.

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16. Outside Europe a number of similar dependent SHs are found. Some have other 'mother' countries than the UK. However, the UK has many small dependencies around the world. They all look for ways to become wealthy, and they talk to each other at various meetings.
17. Offshore finance includes a lot more than banks. There are also various types of investment corporations and many lawyers, accountants and financial consultants, etc. The definition of an *offshore financial institution* is that it is located outside the country of residence of the depositor in a jurisdiction that provides: (i) Greater privacy, (ii) lower taxation, (iii) greater freedom over deposits, and (iv) greater protection against political or financial instability.

Table 5. Some GNI data for 2010 in current US $ billions

GNI in US$ times		Ratio in %		Ratio in %	
Switzerland	570	Switzerland/West	1.7	ESH/West	2.2
ESH	724	Switzerland/World	0.9	ESH/World	1.1
West	33,533				
World	63,149	West/World	53.1	ESH/Switzerland	1.3

Note: The ESHs are Switzerland and the 10 small safe havens. Data from WDI (URL ref.), with estimates for the 10 small safe havens projected from Tables 3 and 4.

One point should be made from the start. When funds are generated by a business it may not like to lose the funds. But the owner may like to replace some of his equity capital with loans from a foreign partner as long as he is this partner himself. So in the future he does not receive taxable dividend, but pays tax deductable interest to his foreign self. In this way a lot of funds may want to return to the sender after an *anonymization*.

4.1   The stock and flow of the big pool: White, gray and black assessed for 2010

As usual white funds are fully legal, gray are funds made by a legal activity that dodges taxes in the country of origin. Black funds are generated by crime, which, of course also must remain hidden from the taxman.[18]

White flows: Such flows may occur when wealthy people or companies move their legal residence to a tax haven. All past taxes are paid, and the funds are legally free to go to a country where future taxes are lower. These flows are surely an effect of the SH-policies. Also, a lot of funds are involved in (legal) currency trade, and some of these funds may seek a safe haven in times of exchange rate uncertainty and debt crises.

Gray funds (1): F. Schneider and various co-authors (see Schneider *et al.*, 2002, 2010) estimate that the gray economy is app. 14 % of the GDP of the West; i.e., for 2010 it is app US $ 4,700 bill. This is an annual flow, but some parts of it never enter the pool: It is in the form of barter-exchange of goods and services, and directly consumed income. But more than half is probably money that wants to hide.

Gray funds (2): Henry (2012) writing for the Tax Justice Network considers a related stock concept. He sums up a survey of the evidence as follows: 'A significant fraction of global private financial wealth – by our estimates, at least **$ 21 to $ 32 trillion** as of 2010 – has been invested virtually tax-free *through* the world's still-expanding black hole of more than 80 'offshore' secrecy jurisdictions.' Thus, the assessment is about $ 25,000 bill. It is a stock, so it corresponds to a flow that is 10 times smaller, or about $ 2,500 bill.

Schneider's and Henry's numbers are in the same order, but Schneider's estimates cover gray income that never enters the pool, and Henry's estimate covers white funds as well as gray. As a crude assessment I will use 25,000 bill. Below, and divide this amount in 10,000 bill white funds and 15,000 bill gray funds. These assessments are entered as rows (1) and (2) in Table 6.

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18. It is a crime to evade taxes, but it is a smaller crime than a bank robbery even when the proceeds are the same.

Table 6. Some guesstimates of the size of the big pool

	Comparison		World	West	ESH		World	West	ESH
	Aggregates from Table 5		63,149	33,533	724		63,149	33,533	724
		Stock	Stock over GNI (%)			Flow	Flow over GNI (%)		
(1)	White funds	**10,000**	15.8	29.8	1400	**1,000**	1.6	3.0	140
(2)	Gray funds	**15,000**	23.8	44.7	2050	**1,500**	2.4	4.5	205
(3)	'Loot' from LDCs	**300**	0.5	0.9	40	**30**	0.1	0.1	4
(4)	Organized crime: Drugs	**2,000**	3.2	6.0	175	**200**	0.3	0.6	17
(5)	Other crime: Others	**1,000**	1.6	3.0	140	**100**	0.2	0.3	14
	Total	**28,300**	44.3	83.5	3800	**2,830** a)	4.4	8.3	380

Note: The cells shaded in gray give amounts in billion US$. The bolded amounts are from the text.
Un-shaded cells are ratios in % of the number at the top of the column.
(a) Rather arbitrarily I assume that half of the $ 2,800 bill never leaves the country of origin. The other half is termed the FSH flow. It is $ 1,400 bill or about ¼ of the gross savings in the West.

Black funds from the third world: The World Bank/UNODC Stolen Asset Recovery Initiative (URL ref.) assesses (in 2012): 'Developing countries lose between $ 20 billion and $ 40 billion each year to bribery, embezzlement, and other corrupt practices.' This is the annual flow with a median size of $ 30 bill. Most of it is a black flow of 'loot'. It is often easy to turn white as it leaves the LDC through respectable firms under the protection of powerful politicians.[19] A number of case stories are reported in the publications of the organization, and it appears that offshore financial services are frequently used to keep these funds safe for the 'looter'. This amount is entered as row (3) in the table.

Black funds from organized crime: Narcotics seem be the largest line of business for organized crime. The annual UNODC (URL ref.) reports on the (illegal) drug industry bring large amounts of statistics. The market is complex both as regards products and distribution nets, and no aggregate data are provided for the final sale. From bits and pieces of evidence it appears that it is between $ 400 and 1,000 bill. Assume that it is $ 600 bill. This is an annual flow.

The trade generates large international payment flows and eventually capital accumulation. A great deal of effort is spent on detection and apprehension of these flows, but it appears that most escape detection. If 1/3 of this annual production (measured in end user prices) turns into profit that accumulates to a fortune 10 times larger, we are dealing with funds of $ 2,000 bill. Narcotics are not the only line of business in organized crime – maybe the rest is half as large.

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19. It is termed 'loot' as it is obtained by illegal means. To the extent participating LDC-politicians are 'above the law', it is a matter of definition if it is 'criminal'. But when the politician is deposed, it turns into a crime that is vigorously investigated to discredit the former leader.

The numbers from the preceding four paragraphs are put together in Table 6. The last row of Table 6 sums the total stock of 28'000 bill and an annual flow of funds of $ 2,800 bill.

4.2   Offshore finance is big business: The annual flow to the ESHs: FSH ≈ $ 1,000 bill

Henry (2012) assesses that all of these money passes through safe havens, but many countries have domestic arrangements that provide 'small' local SHs (think of, e.g., New Jersey and Delaware). So by a loose guess 'only' half of these funds is the 'free' flow of funds that seeks a foreign safe haven. There are more SHs than the European ones, but the European ones are probably seen as relatively safe, so I assume that at least $ 1,000 bill enters the ESHs. It is 140 % of the GDP of the ESHs, so this is a huge amount. From now on it will be termed the FSH, which is the flow to the European Safe Havens. It is an uncertain guesstimate.

Most safe havens are rather stringent with financial statistics. However, it is often possible to calculate the *asset-ratio* – between bank assets and the GDP. The numbers cited in the next paragraphs are closely related to the numbers used by Henry (op. cit.).

In the typical developed western economy the asset-ratio is in the range of 0.6-1. In Cyprus before the collapse the asset ratio was about 7, and in Switzerland the asset ratio is about 10. The Swiss bank assets are thus a bit larger than the GDP of Germany. This huge asset balance has been built over more than half a century.[20] The record of Swiss banks is so strong that the crisis of 2009 caused massive capital inflows to the Swiss banks, and a large appreciation of the Swiss Franc (CHF) resulted.

Jersey, Gibraltar and Guernsey[21] have asset-ratios of about 67, 10 and 45 respectively. In addition to banking there is a complex of other financial services, accounting, legal advice, and SH-tourism. The financial services complex is the largest industry in these countries, and it is probably even larger in Liechtenstein[22] where it may generate incomes above 50 % of GDP.

4.3   The distinction between staying in and passing through

The main purpose of using offshore banking is to hide funds from the authorities of the country where they are earned. This has two elements:

(A) Owners may want to pass funds through the veils of anonymity. This is a short-run facility that is served by all safe havens, and it does not put great demands on the general credibility of the safe haven. The money goes in one day, and then it is moved to another bank maybe in another SH and provided with a new identity, and

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20. In Iceland a similar asset-ratio was built during the first decade of the 21st century, but it was built by increasing the credit multiplier, so it collapsed when the crisis of 2009 hit the economy. It is a major job to build enough reserves and credibility so that a safe haven is robust to crises.

21. The UK dependencies of Jersey, Gibraltar and Guernsey have financial service commissions that give some information on their home pages. It is not very detailed and of dubious comparability.

22. Liechtenstein's financial sector (URL ref.) reports 168 *treuhandgesellshafts* and 54 firms in *vermögenswervaltung,* which all administrate funds. It also reports 14 banks and 174 law firms. Some of these firms overlap.

then it goes back home. Obviously such funds pay fees for the service, but these fees are much smaller than the taxes dodged.

(B) Funds may want a stay in a safe place. This is a long-run facility that needs a substantial economy with high credibility. Of the ESHs only Switzerland is well suited for that role. This is precisely because it is the only safe haven that has a full normal economy in addition to the large offshore financial sector with highly rated banks.

If it is assumed that the average asset ratio in the ESHs is about 12, then by the usual steady state assumptions that all ratios are constant, the assets grow the same rate as GDP, i.e., 2 % p.a. This gives an annual growth of ESH bank assets of 2 x 12 % = 24 % of the GDP. Many of these have to be placed outside the ESH.

Section 3 guesstimated that the flow of funds reaching the ESHs is about $ 1,000 bill. If this number is converted to a share of the GDP of the ESHs, it is about 140 %. It can be compared with 24 % of the FSH that ends up on the assets balance of the safe havens. The remaining 116 % of the FSH (still as a share of GDP) just passes through the ESHs in order to turn anonymous.

5. The effect of the inflow on the economies of the safe havens

When the ESHs get capital inflows as shown in section 4 they surely get richer, and as shown in section 2 they are substantially richer than their neighbors. However, the inflows seem much larger than the countries can possibly absorb. Theoretically this is part of *the transfer problem* that has been discussed in many other contexts.

Here the difference between Switzerland and the 10 dwarfs becomes important. Section 5.1 looks at the absorption capacity of an ESH for external funds, FSH, and section 5.2 considers the relation between capital inflows and the exchange rate. Section 5.3 turns to the case of the Swiss Franc and finally, section 5.4 looks at the conditions for running a safe haven.

5.1 The absorption capacity for net financial inflow

Many studies have been made of the savings-investment balance and of the national asset/liability balance sheet of the typical DC. Normally the capital requirements are well covered by domestic savings. DCs have capital output ratios of 2½ to 3½, where half is the housing stock. In addition somebody must hold the public debt, which for the average DC has the same size as the GDP. Thus, the assets that have to be financed are about 4 times GDP. The assets grow by the same rate as GDP; i.e., by 2 % − corresponding to the net savings rate of 4 x 2 % = 8 % of GDP. The gross savings rate is about twice of that. The typical DC can surely absorb some capital inflow, but it soon leads to major distortions if the size of the inflow grows.
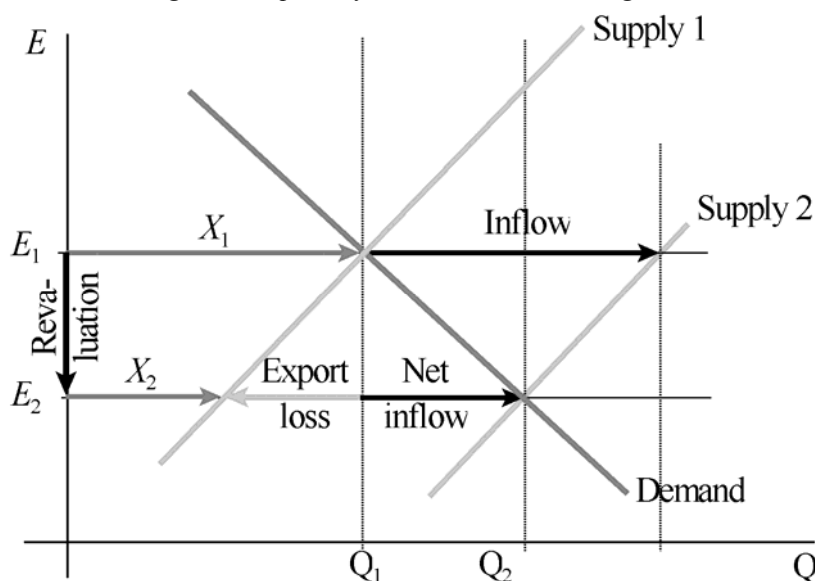
The ESHs are in many ways typical DCs. Thus, an annual capital import of even one time the GDP is far in excess of the absorption capacity of the ESHs. The ESHs probably have relatively high capital output ratios as capital is cheap, but then they have relatively low levels of public debt. So maybe the financial requirements end up at a rather typical level. Thus, when the bank balances in say Guernsey are 45 times GDP it is obvious that more than 98 % of these funds must be placed elsewhere.

5.2   Offshore banking, capital inflow and the exchange rate[23]

Another way to see that funds cannot remain in the ESHs is to consider the consequences for the exchange rate if they did. A successful offshore financial center generates a capital inflow that is large relative to GDP.

The quasi-static analysis of Figure 3 shows the equilibriums (E_1, Q_1) before and (E_2, Q_2) after the inflow. It gives a real revaluation where the exchange rate moves from E_1 to E_2. The real exchange rate, E, shown is calculated from the nominal rate, E^n, by $E = E^n(P^N/P^S)$, where the P's are the price levels in N and S.

Figure 3. Capital inflow and the real exchange rate

On Figure 3 the supply of foreign currency without the FSH inflow is due to normal export, X_1, that is used to pay for import. The FSH flow is taken to be of the same size. This causes a revaluation of 50 %, and other exports falls to X_2, which is an export loss of 1/3.[24] These numbers are examples only – the key observation is that when we are dealing with inflows that are substantial relative to GDP they are likely to cause large revaluations, and hence a large export loss.

Theoretically, the two equilibriums are the same in the floating and fixed exchange rate case, but the processes by which the equilibrium changes differ. If the exchange rates are floating, the nominal rate revaluates, and this reduces inflation so that some of the reduction in competitiveness is offset. If the exchange rate is fixed, the inflow means that the banks in S are awash with liquidity, interest rates fall and the activity level increases. This causes inflation and a real revaluation. This analysis leads to two observations:

(i) No economy can live with annual real revaluations of even 2 %. So it is essential to send most of the inflow out again. This is the same result as in section 5.1 on the absorption capacity, but reached in a different way.

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23. The treatment of the Swiss case builds on Chapters 2 and 5 in Christoffersen *et al.* (2013).
24. Paldam (1997) studies the effect of an annual inflow of subsidies of 50 % of GDP to a microstate and finds a real revaluation of about 50% as well.

(ii) The floating rate cases seem to give a 'nicer' adjustment. However, this is only the case if the inflow is steady and the economy is sufficiently large to absorb minor fluctuation. For a micro economy neither of the two conditions is likely to hold.

This explains why Switzerland has had a more or less floating exchange rate since 1971, and also why all of the smaller ESHs have chosen to attach their currency to the one in the neighboring country, in the strong way that they use the same currency.

5.3   The extreme case of the Swiss Franc

The CHF, Swiss Franc, has thus floated since 1971, and it has revalued by an annual rate of 2.7 % relative to the Euro and the US $.[25] In 1971 the price of 1 US $ was 4.2 CHF, and today it is 0.9. So the revaluation is almost 5 times – this is clear world record. It indicates that Switzerland has absorbed some of the capital inflow. The low interest rates and high property prices and many other unusual features of the Swiss economy tell the same story.[26]

The floating is normally rather gentle, except in times of financial instability. In the 3rd quarter of 2011 where the Greek economy was at the brink of default the CHF revaluated with 19 %. This caused the Swiss Central Bank to fix the rate at the old rate, and as a result the foreign reserves jumped from 25-30 bill CHF to almost 500 bill CHF, which is more than twice the reserves of Germany.

The constant nominal exchange rate of revaluation has meant that Switzerland has had a low rate of inflation, but it is on average (over the period) only 0.5 % lower than the one of its biggest neighbor to the north, Germany, and the northern part of the EU in general. Fortunately for Switzerland, the southern part of EU, including its large neighbor to the south, Italy, has had much more inflation than Switzerland.

5.4   The policy package necessary to generate long-run credibility for a safe haven

Most of the arguments above suggest that the beneficial effects of the inflows are unproblematic for small to moderate inflows, but taper off for large inflows.

A literature discusses the conditions for a good 'investment climate.'[27] The modern discussion was probably started by Borner *et al*. (1995) and the World Bank (1997). This literature is relevant for the maintenance of a credible safe haven. Also, a handful of firms – such as Standard & Poor's, Moody's and ICRG – try to measure aspects of the credibility of countries. To be a safe haven, a country obviously has to be rather credible and it must have been so for some time. It is not enough to score triple A for a few years.

In my assessment the 6 conditions listed in Table 7 are the key ones for a country that wants to become a long-run financial safe haven. All six items are also good for normal business. Even if it did not generate large scale offshore banking, the package would still be recommended by business organizations. The package

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25. By chance the two main currencies had the same relation both in 1971 and in 2012.
26. The reader is referred to Chapter 2 in Christoffersen *et al.* (2013)
27. Much was written in connection with the World Bank (1997) and in the next decade. Closely related literature deals with international competitiveness and the conditions for receiving FDIs.

hangs together so that if some of the conditions are fulfilled, the others are easier to meet. If the policy starts to work, the country gets large capital inflows, the balance of payments improves and wealth is produced. When the population sees that the policy works it becomes popular and easier to defend. Thus, the policy has an inner dynamic which becomes a good cycle.

Table 7. The long-run safe haven package

(1)	A system of well-secured and highly trusted property rights
(2)	A developed banking system with high solidity and a well-protected secrecy
(3)	A stable, conservative political system generating predictable policies and low taxes
(4)	A high level of honesty within the country
(5)	A solid economy with no looming debt and balance-of-payment crises
(6)	An arm's length principle as regards fully black funds

The bank secrecy in (2) is essential to attract gray and black funds, and the low tax part of (3) is necessary to attract white funds. It is essential that the state does not seem to be in desperate need of taxes (5), so that dangers to funds entering loom large in the future.

A safe haven is a promising place to turn black money white, but it is an obvious point that a safe haven has to hold criminals at an arm's length.[28]

Some countries have managed to be safe havens for some time, but then they failed. They provide illustrative examples. Iceland built an SH economy in just one decade by increasing the credit multiplier, and about a year before the collapse it became known that rule (2) bank solidity was a problem. Part of the problem in Cyprus was deep political divisions making rule (3) problematic.

6.   Conclusion: Is the scope for safe haven seriously hampered?

This paper has empirically established a causal chain: Small countries often pursue safe haven policies and normally this makes them rich. A theory has been presented that explains this causal chain. Thus, safe haven policies are a temptation of some moral ambiguity, which most European microstates and some small states pursue. Most do so with great success, so the temptation is large indeed.

The main safe haven activity is offshore banking. Large amounts are involved – far in excess of the absorptive capacity of the safe havens. Most funds floating into safe havens floats back home, though under a formally new ownership. The main problem for the home countries of the flows is the loss of tax revenue. The very small safe havens mainly work as gates to anonymity, while the Swiss financial sector also works as a guarantor of funds invested in Switzerland and elsewhere.

Recently a great deal of pressure has been applied on safe havens to reduce bank secrecy and money anonymization. The EU, IMF and OECD and as well as a number of countries – notably the USA and Germany – have demanded that all

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28. The arm's length principle (6) is a bit like the mafia rule in Las Vegas: No owner of a Las Vegas casino is allowed to have any economic connection to known criminals. However, a casino appears to be a great device for turning black money white, so from time to time mafia connections to casinos are discovered.

accounts are authenticated and account information is made available to the authorities in the countries of origin of the funds.

On paper a lot has been done. A handful of international agreements of tax cooperation and money laundering have been made, and most safe havens in Europe have gradually signed these agreements. However, it is a complex ongoing process to make sure that such agreements are implemented. The governments of safe havens surely have mixed interests in the matter, so they cannot be expected to be keen on compliance. Also, in order to make them sign, the treaties are not too rigorous, and an army of lawyers is working to find loopholes. It is well-known that it is easy for countries to pay lip service only to international agreements.

Consider the job at hand. In Guernsey the latest statistic puts the total bank balance at 139 billion UK £. The Financial Service Commission of Guernsey (URL ref.) does not state how large the staff is, but from the organizational diagram and the text, it appears that less than 50 employees are controlling accounts for dubious entries.[29] If nobody points to a particular account, it is unlikely that a fishy flow through a normal looking account will be noticed.

Thus, it appears that the efforts have made offshore banking a bit more difficult, but by no means impossible: Where there's a will, there's a way.

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29. Thus, each controller has a balance of 3 billion £ to control. If the average balance on an account is £ 5,000, the regulator deals with 600,000 accounts. With a normal working year each account can be scrutinized for about 10 seconds once a year. Of course, the scrutiny will be made by computers looking for patterns, but then a pattern has to be singled out as suspicious.

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