

## **The Economic Cost of Rolling Back Schengen**

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This paper looks at the economic consequences of re-establishing permanent border controls within the Schengen Area.

In the near term, there will be a negative impact for short-stay tourists, cross-border workers, tourists from outside Schengen visiting several countries in the Area and freight carriers. Depending on the frequency of the controls, the direct cost for the French economy would be between one and two billion euros, excluding the fiscal cost of implementing the measures. Half of these costs would stem from a reduction in the number of tourists, 38% from the impact on cross-border workers and 12% from the cost to freight transport.

In the longer run, widespread permanent border controls would decrease trade between Schengen countries by a factor 10% to 20%. This is equivalent to a 3% ad valorem tax on trade, leading to a loss for France of half a percentage point of GDP, or more than 10 billion euros. This does not include the impact on foreign investment and labour mobility.

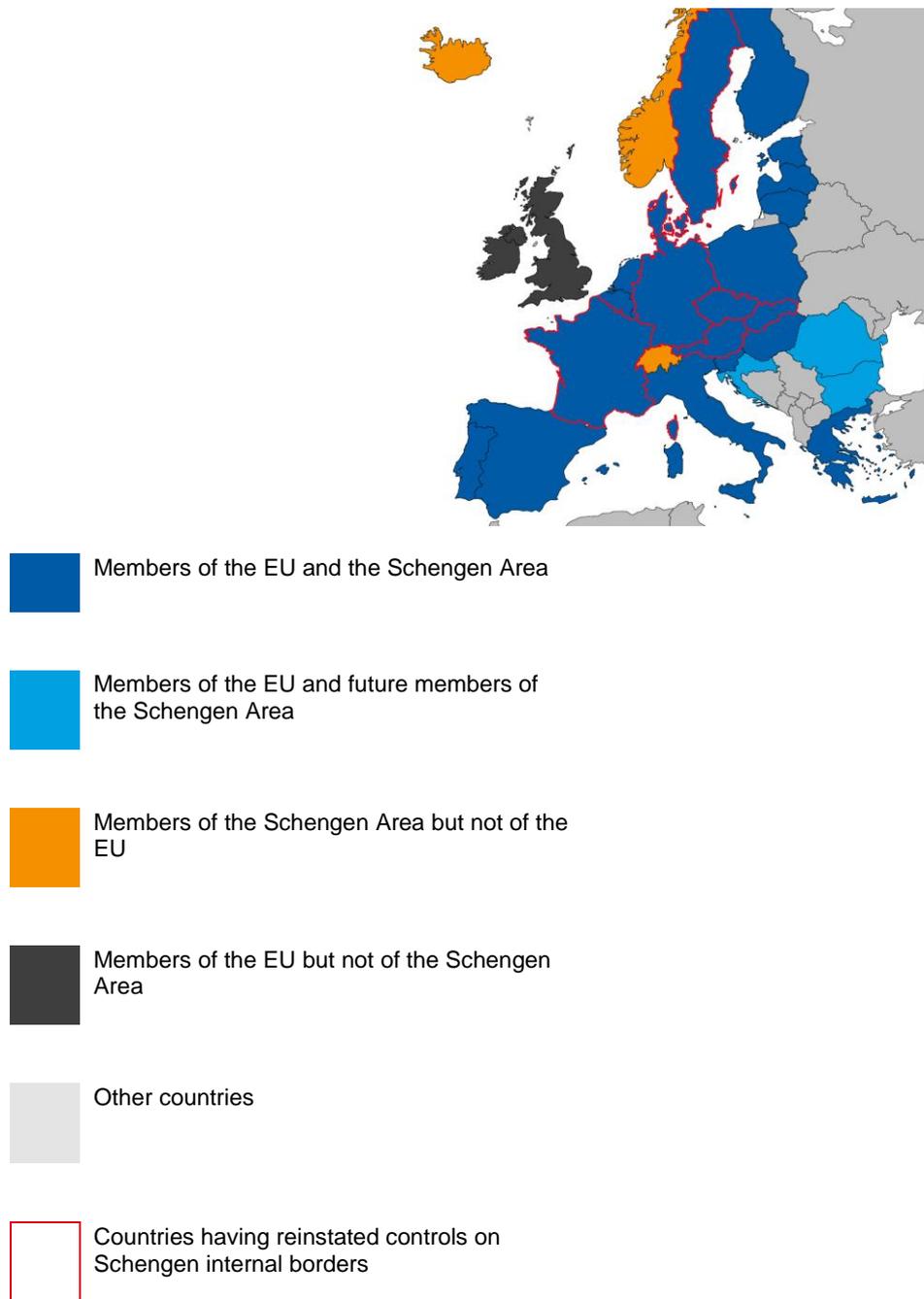
Overall, the Schengen Area's GDP would be reduced by 0.8 points, equivalent to more than 100 billion euros. An additional impact on labour mobility, foreign investment and financial flows can be anticipated but is difficult to quantify.

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**Figure 1: Re-establishing border controls in the Schengen Area**



## Introduction

The war in Syria and the overall instability in the Middle East have led to massive refugee flows into Europe. There were more than 1.2 million official asylum seekers in 2015, mostly from Syria, Afghanistan and Iraq. This was up from 626 000 in 2014 and around 350 000 in 2013. Though the vast majority went to Germany, Hungary, Austria and some Nordic countries like Sweden have also had to cope with large numbers of refugees.

Faced with this predicament, Austria re-established border controls in autumn 2015 and even built a fence along its border with Slovenia, another Schengen member. In September 2015, Germany reinstated border controls, while France followed suite in the aftermath of the November 13 Paris attacks as it declared a state of emergency. Sweden and Denmark also re-established border controls early this year (see figure 1).

While the Schengen Agreement allows for temporary border controls, extending them requires a certain protocol. On January 26, the ministers of the interior from the Schengen countries met in Amsterdam to request the Commission initiate the procedure allowing for the extension of border controls for up to two years. After an inquiry and consulting with the European Council, the Commission will be able to authorise this extension of border controls.

Having celebrated last year three decades since the signing of the Schengen Agreement and two decades since its implementation, it is a fitting time to carefully weigh the economic costs of re-establishing permanent border controls.

Border controls would undoubtedly have consequences for both people and the transport of merchandise. Difficulties have already arisen at several important crossings since the end of 2015. Systematic controls of vehicles on the French and Spanish border have already created important bottlenecks. Reports point to traffic jams of up to 5 to 20km at certain points in time in November, and massive queues were experienced the last weekend of the Christmas holidays. Half an hour additional time is frequently observed on the Franco-Belgium border. The same can be seen at the Franco-Swiss and Franco-Luxembourger borders, in particular between Annecy and Geneva. On the Øresund Bridge connecting Copenhagen to Malmö, the implementation of border controls has created delays of up to 45 minutes for cross-border workers. These delays will reduce cross-border flows of people and merchandise and add significant economic costs.

This paper aims to assess the costs to France of these new border controls. The first section focuses on direct and short-term costs due to the consequences of longer travel time for short-stay tourists, cross-border workers, tourists from outside Schengen visiting several countries in the zone and freight carriers. The second section presents longer-term impacts linked to a reduction in cross-border trade. Other, more subtle effects are also looked at.

## I. Short-term potential impact of border controls on France

This section looks at the short-term economic consequences of additional delays at the border for tourists, cross-border workers and lorries. Two scenarios are analyzed.

- Scenario 1: Random controls of private cars and lorries as prevailed before the implementation of Schengen Agreement, with moderate delays at borders
- Scenario 2: More frequent but not systematic controls of cars and lorries, leading to a doubling of average delay times at borders

### A. Impact on tourism

France is the world's premier tourist destination, with 83 million foreigners spending at least one night and 122 million same-day visitors in 2014 (see table 1). Total spending by foreign travellers amounts in France to 2.4% of GDP.

Even though this paper focuses on the re-establishment of border controls, it is worth noting that if this is accompanied by the end of the Schengen Visa, it could put a serious dent in the flows of tourists from outside Schengen and their movements within the zone. This is because they would be obliged to choose a country or make several visa requests to travel within the Schengen Area.

The European Tour Operator Association (ETOA) estimates in its Origin Market Report that under current conditions the visa requirements already reduce the number of tourists entering the Schengen Area by 21%. Other studies based on historical evidence point to an increase between 5% and 25% of the number of tourists if visa requirements are eased. This would translate into tens of billions of euros in income gains and hundreds of thousands of additional jobs according to these studies. Conversely, making it more difficult to get a Schengen Visa would severely impact the tourism sector.

In this paper we focus only on the economic consequences of border controls, and we leave aside the consequences of the possible end of the Schengen Visa for third-country visitors.

**Table 1: Arrivals and visitors according to continent of origin, 2014**

Continent of origin	Arrivals (millions)	Overnight visitors (millions)	Same-day visitors (millions)
Europe	68.4	455.5	116.8
European Union (28)	60.7	410.2	91.3
Euro Zone (18)	46.2	308.5	85.0
Americas	6.6	57.6	2.7
Asia and Oceania	6.3	51.2	1.6
Africa	2.4	34.7	0.9
Total international visitors	83.6	599.0	122.1

*Sources: Key figures for tourism in France from DGE database, Banque de France, EVE.*

**Table 2: Arrivals and visitors according to country of origin, 2014**

Country of origin	Arrivals (millions)	Overnight visitors (millions)	Same-day visitors (millions)	*Revenue (€ billions)
Germany	12.7	86.4	24.5	6.8
United-Kingdom	11.8	79.7	5.1	4.7
Belgium and Lux.	10.7	65.9	35.1	5.7
Italy	7.5	42.7	10.7	3.0
Switzerland	6.2	33.6	25.0	3.8
Spain	6.1	34.7	10.7	2.5
The Netherlands	5.5	43.6	2.9	2.6
US	3.2	27.6	1.4	2.4
China	1.7	10.8	0.4	0.8
Australia	1.3	9.2	0.1	0.8

\*Overnight and same-day visitors

Sources: Key figures for tourism in France from DGE database, Banque de France, EVE.

**Table 3: Average expenses in euros according to duration of stay, 2013**

Duration of the stay	Total	Transport	Food and drinks in cafés or restaurants	Accommodation	Other expenditure
Same-day visitor	0,00	56.34	10.23	0,00	16.77
1 night	159.53	56.34	30.69	38.96	33.54
2 nights	319.06	112.68	61.38	77.92	67.08

Source: Calculus by France Stratégie from Eurostat [tour\_nat\_expern], 2013 data

In order to estimate the adverse impact on tourist spending in France, we assume the following in scenario 1:

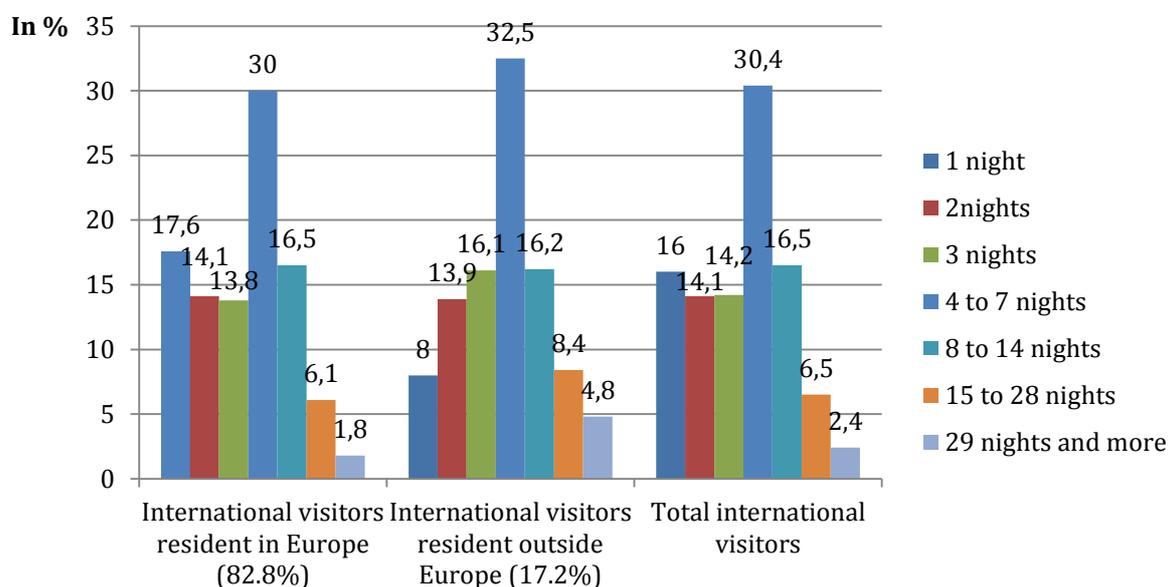
- A net 5.0% decrease<sup>3</sup> of same-day visitors, combined with a 2.5% decrease in overnight visitors from Germany, Belgium, Luxembourg, Italy, Switzerland, Spain and The Netherlands spending a maximum of two nights in France
- No impact on the number of visitors staying more than two nights, given that time spent at the borders may seem negligible in comparison to the duration of their stay in France
- Average expenses of €159.5 per day for tourists staying between one and two nights and average expenses for same-day visitors of €83.3 (see Table 3 and figure 2)

In scenario 2, we assume the number of same-day visitors would decrease by 10% and the number of visitors staying a maximum of two nights would decrease by 5%.

<sup>3</sup> Some French tourists may also be deterred from short travel abroad. For instance, more Parisians may spend the weekend in Bordeaux rather than in Amsterdam. Yet given arrivals are 3.5 times that of departures, and average expenses of French tourists in France are on average half those of foreign tourists, the net effect will no doubt be negative.

This would be caused by additional delays at main crossings and in particular during peak periods for tourism.

**Figure 2: Arrivals of international visitors and duration of stay**



Sources: DGE, Banque de France, EVE study.

Under these assumptions, the loss in revenues for France would amount to around 500 million euros per year in scenario 1 (see table 5) and around one billion euros in scenario 2.

**Table 4: Income loss due to a 5.0% decrease in same-day visitors and a 2.5% decrease in overnight visitors (scenario 1)**

	Number of visitors (millions)			Expenses according to duration of stay (€ millions)			Loss in revenue (€ millions)
	0 nights	1 night	2 nights	0 night	1 night	2 nights	
Germany	24.50	2.24	0.32	2 042	357	101	114
Belgium and Lux	35.10	1.88	0.27	2 925	300	85	156
Italy	10.70	1.32	0.19	892	211	59	51
Switzerland	25.00	1.09	0.15	2 084	174	49	110
Spain	10.70	1.07	0.15	892	171	48	50
The Netherlands	2.90	0.97	0.14	242	154	44	17
<b>Total</b>	108.90	8.57	1.21	9 076	1 367	386	<b>498</b>

Source: Authors' calculations.

## B. Impact of the increase in commuting time

Reintroducing border controls would significantly impact cross-border commuters and their quality of life. A figure can be put on this loss by using the amount these people would be willing to pay – i.e. their propensity to pay – to prevent this from happening.

The Quinet report<sup>4</sup> provides reference values for the socio-economic evaluation of transport infrastructure: the value of travel between home and work is equal to 10 euros per hour.

If we assume in scenario 1 the light controls at the border increase crossing time by 10 minutes on average, the social cost would be equal to €1.7 per border crossing. In scenario 2, we estimate that reinforcing controls doubles the additional travelling time to 20 minutes.

Table 5 lays out the details of the calculation of the annual socio-economic cost based on the assumption of a 10-minute delay in scenario 1. Given there are 350 000 cross-border commuters who work 217 days a year, we estimate a cost linked to the increased commute time of around **250 million euros** per year. It would be twice as much in scenario 2.

**Table 5: Socio-economic cost of longer border crossings for cross-border commuters (scenario 1)**

Number of French cross-border commuting workers <sup>(1)</sup>	350 000
Additional time needed to cross border <sup>(2)</sup>	10 minutes
Value of time for home to workplace travel <sup>(3)</sup>	€10.0 per hour
Number of crossings per working day	2
Number of working days per year <sup>(4)</sup>	217
<b>Estimated cost per person per year</b>	<b>€723.0</b>
<b>Total cost</b>	<b>€253.2 million per year</b>

Sources:

(1) Approximate value (French statistics office INSEE put number at 353 000 in 2011).

(2) Indicative value.

(3) Reference value from Quinet 2013 (the value is in €2010/hr but for the sake of simplification we didn't recalculate the value, which means it is undervalued by about 5%).

(4) We assume the number of working days is the same as full-time workers in France.

<sup>4</sup> Quinet E. (2013) « L'évaluation socioéconomique des investissements publics », France Stratégie.

In addition to this, we can expect increased commuting time would reduce cross-border job opportunities. Indeed, assuming time lost equals 70 euros per month per commuter in scenario 1, we can conclude this is equivalent to a loss in wages of the same amount with no change in commute time. With a 0.5 elasticity of job supply with respect to wages, a 70-euro wage decrease would equal a loss of more than 5 000 cross-border workers in scenario 1 and an economic loss of 150 million euros, without considering costs linked to the potential increase of unemployment.

In scenario 2, the cost would be twice as much, with a decrease of 10 000 cross-border workers and a loss equivalent to 300 million euros. Again, this would not take into account the cost of more joblessness.

### **C. Impact on freight transport**

The systematic control of haulers and their freight can prolong transport time by several dozen minutes.

The example of the UK border gives an idea of the human resources deployed and additional delays this entails. In addition to the main border checkpoints, France would also have to monitor hundreds of secondary entry points towards to prevent illegal entry.

The reinstatement of border controls might also have an effect on international trade and consequently economic activity. In section II we focus on the assessment of the direct costs incurred by freight imports and exports.

To calculate this, we assume an average of an extra 30 minutes in lorry border crossings in scenario 1 and twice this time in scenario 2. This includes delays due to congestion, and we forecast that the time needed for controlling lorries would be longer than for other vehicles. We base our calculation on the following data:

- Volume of goods unloaded in France, transported by lorries and loaded in another Schengen country
- Volume of goods loaded in France, transported by trucks and unloaded in another Schengen country
- Value of time in goods
- Value of time for hauler

We don't factor in the cost for lorries loading and unloading abroad and transiting on the national territory. We only take into account the impact on import and export costs.

Table 6 shows how the cost is calculated. With an almost equivalent volume of goods for export and import – 22 tonnes transported in both directions by three million trucks – an extra time of half an hour to cross the border induces additional costs associated with the volume of goods of six million euros and a further extra cost for the carrier of 56 million euros for both imports and exports.

Therefore, with the same volume of incoming and outgoing trucks, total costs are estimated at 62 million euros a year both for imports and exports in scenario 1. This is doubled in Scenario 2.

**Table 6: Cost of border controls on lorry freight (scenario 1)**

	Imports	Exports	Units
Volume of goods <sup>(1)</sup>	21.5	21.7	millions of tonnes
Number of lorries <sup>(2)</sup>	3.0	3.0	millions
Value of time in goods <sup>(3)</sup>	0.6	0.6	euros/hour/tonne
Value of time for hauler <sup>(3)</sup>	37.0	37.0	euros/hour/lorry
Additional delay at the border <sup>(4)</sup>	0.5	0.5	hours
Cost in goods	6.0	7.0	millions of euros
Cost for hauler	56.0	56.0	millions of euros
<b>Total cost</b>	<b>62</b>	<b>62</b>	<b>millions of euros</b>

Sources:

(1) Eurostat, [road\_go\_ia\_ugtt] for imports (goods unloaded in France, transported by lorries and loaded in another Schengen country).

[road\_go\_ia\_lgtt] for exports (goods loaded in France, transported by lorries and unloaded in another Schengen country).

(2) CGDD.

(3) Reference value from Quinet, 2013.

(4) Indicative value.

## II. Medium- and long-term impact of permanent border controls

As has been described above, reintroducing border controls will negatively impact foreign visitors and cross-border commuters and will increase the freight cost of exports and imports.

Moreover, while freedom of movement is not necessarily associated with the Schengen Agreement, it does however help facilitate it. The available economic studies<sup>5</sup> tend to show that calling Schengen into question would reduce the flow of people throughout the area, leading to a concomitant decline in commercial and financial exchanges.

### A. Impact on international trade

#### Empirical studies

Davis and Giff<sup>6</sup> assess the impact of the Schengen Agreement on bilateral trade. By using a gravity model over the period 1980-2011, they estimate that when two countries belong to the Schengen Area, the bilateral trade flows are 10% to 15% higher<sup>7</sup>.

Chen et Novy<sup>8</sup> also show that the Schengen Area significantly decreases the trade frictions between two trade partners.

In an as yet published work, Thierry Mayer and Camilo Umana Dajud have implemented estimates of different gravity models and also find a significant effect of the Schengen Area, with an order of magnitude between 13% and 20% depending on the econometric specification.

These effects are structural and should be stable in the long term. Such a negative impact on exports and imports – of around 10% in the lowest estimate – would be equivalent to a shadow tax of 3% on the value of the exchanged goods and services. In the case of a collapse of the Schengen system, this shadow tax would apply to all trade flows between countries in the current Schengen area.

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<sup>5</sup> For a review of the literature see Ademmer E., Barsbai T., Lücke M. and Stöhr T. (2015) “30 years of Schengen, internal blessing, external curse ?”, Kiel Policy Brief, N°88, June 2015.

<sup>6</sup> Davis D. and Giff T. (2014) “The positive effects of the Schengen agreement on European trade”, *The World Economy*.

<sup>7</sup> There is a misprint in the article of Davis and Giff since the interpretation of estimated parameters suggests between 10% and 15% and not 0.1% as mentioned in the text.

<sup>8</sup> Chen, N., & Novy, D. (2011) “Gravity, trade integration, and heterogeneity across industries”, *Journal of International Economics*, 85(2), 206-221.

## Box 1: Estimation of the impact of Schengen on bilateral trade (Mayer and Umana-Dajud)

Tableau 7: Estimation results

	Model (1)	Model (2)	Model (3)	Model (4)
Sample	Expanded Europe	Expanded Europe	World	World
Distance	-1.434 ***			
Population, exporting country	0.800 ***			
Population, importing country	0.671 ***			
GDP/population, exporting country	1.106 ***			
GDP/Pop, importing country	0.832 ***			
<b>Schengen</b>	<b>0.186 ***</b>	<b>0.231 **</b>	<b>0.130 *</b>	<b>0.209 ***</b>
Free trade agreements	0.250 ***	0.711 ***	1.804 ***	0.372 ***
European Union	0.364 ***	0.059	-0.416 ***	0.489 ***
General agreements on tariffs and trade	0.617 ***	0.582 ***	0.365 ***	0.114 ***
Shared currency	0.277 ***	0.367 ***	1.310 ***	0.190 ***
Shared language	0.152	0.189	1.073 ***	
Shared border	0.160 *	1.581 ***	2.218 ***	
<b>Fixed effects</b>				
Year	X			
Exporting country*year and importing country*year country pairs		X	X	X X
Observations	41411	41406	739160	737566
R2	0.867	0.878	0.680	0.866
rmse	1.062	1.060	1.857	1.223

\* p<0.1      \*\* p<0.05      \*\*\* p<0.01

Source: Thierry Mayer and Camilo Umana Dajud.

Model 1 consists of an estimation of a simple gravity model. This includes countries from an expanded European area in the sample and takes into account different explaining variables, such as the distance between countries, the respective populations of the importing country and the exporting country, their respective GDP per head and whether these trade partners share the same currency, the same language and a border or not. It also covers variables that may have affected their relations during the covered period, i.e. the two partners belong to the Schengen Area, the European Union or adhere to a trade agreement (e.g. GATT or FTA). This model also includes fixed effects per year

Model 2 is more constrained and considers the same sample of countries but adds both the importing country, year, the exporting country and fixed effects per year. The third estimation widened the scope of the second estimation to a world sample and, finally, model 4 constrains the estimation even more by adding fixed effects for pairs of countries.

As can be seen, the results are robust and show a significant impact of the Schengen Area on bilateral trade, suggesting it is given a boost of 13% to 20% when two countries are members of the Schengen Area.

### A simulation with the MIRAGE model

On this basis, the French economics institute CEPII<sup>9</sup> has used the computable general equilibrium (CGE) model MIRAGE (see Box 2) to take into account the effect of macroeconomic feedback resulting from imposed border controls.

The modelling of reintroducing border controls inside the Schengen Area is carried out by implementing an iceberg cost<sup>10</sup> equivalent to a 3% ad valorem tax on all trade flows between countries belonging to the current Schengen Area.

Under this assumption, such a situation would lead to a decrease in average bilateral trade between Schengen member countries from 12.5% to 10.5% by 2025, depending on whether the importing country and the exporting country are also members of the European Union or not (see Table 8).

The French GDP would be 0.5% lower in 2025 compared to a business as usual scenario, and the consolidated GDP of the Schengen area would lose 0.8%, which is equivalent to a loss of more than 100 billion euros (see Table 9).

**Table 8: Percentage of variation in bilateral trade inside the European Union and the EFTA in 2025**

Exporting country	Importing country				
	France	Schengen-EU	EFTA	Non-Schengen EU	
France		-11.4	-10.8	1.5	
Schengen EU	-11.4	-11.5	-10.5	2.0	
EFTA	-13.7	-12.5	-12.0	6.5	
Non-Schengen EU	1.9	1.6	3.2	-0.3	

**Table 9: Variations in GDP due to the reintroduction of border controls in the Schengen Area in 2025**

	ΔGDP in %
<b>Schengen Area</b>	<b>-0.79</b>
France	-0.50
Schengen EU	-0.86
EFTA	-0.80

<sup>9</sup> Centre d'Etudes prospectives et d'informations internationales.

<sup>10</sup> An iceberg cost assumes that a fraction of the value of the transported good is consumed when crossing the border. This is a typical way to model the effect of tariff barriers on trade.

## **Box 2: A simulation using the Mirage model**

MIRAGE is a multi-sectoral and multi-regional computable general equilibrium (CGE) model designed for the analysis of trade policies<sup>11</sup>.

The version of the model used includes the following countries:

- 1) France.
- 2) Members of both the Schengen Area and the European Union: Schengen – EU.
- 3) Members of the European Union but not of the Schengen Area: Non-Schengen – EU.
- 4) Members of the Schengen Area but not of the EU: EFTA countries.
- 5) The other countries are aggregated in eight regions.

The impact of reintroducing border controls is assessed with respect to a baseline scenario in which the traditional dispositions of the Schengen Agreement are maintained and border controls are removed.

The effect of the border controls is translated in the model by an additional iceberg cost, reflecting the implicit trade barriers identified by the empirical literature. This cost is equal to 3% of the value of the bilateral trade. It is implemented from 2016 and maintained constant during the whole simulation period. It concerns all trade flows between countries belonging to the current Schengen Area.

## **B. Other potential impacts**

### **Impact on foreign direct investment (FDI) and financial flows**

Kugler, Levintal and Rapoport<sup>12</sup> use a gravity model to show that bilateral financial flows depend on traditional variables (e.g. distance and language) but are also influenced by migration. They demonstrate an elasticity between international bank lending and migration varying from 0.12 and 0.18. Therefore, it is very likely that as with international trade, the decrease in freedom of movement within the Schengen Area would impact financial flows and FDI. However, these effects are difficult to quantify.

### **Impact on the European project**

As one can see in Figure , the free movement of people, goods and services is the second most appreciated concrete result of the European Union, almost on par with “peace among the Member States of the EU”. Of course, the Schengen Area is not the only component of the free movement of people in Europe, but it is an essential

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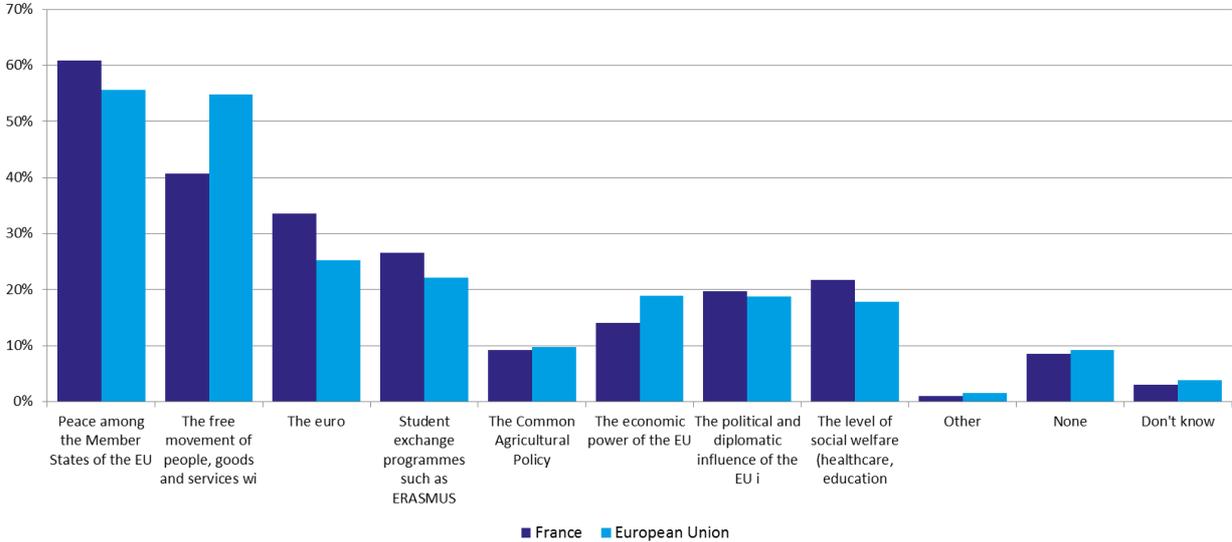
<sup>11</sup> See Decreux, Y. and Valin, H. (2007) “MIRAGE, Updated Version of the Model for Trade Policy Analysis with a Focus on Agriculture and Dynamics”, CEPII Working Paper no. 2007-15.

Website : [http://www.cepii.fr/CEPII/fr/bdd\\_modele/presentation.asp?id=14](http://www.cepii.fr/CEPII/fr/bdd_modele/presentation.asp?id=14)

<sup>12</sup> Kugler M., Levintal O. and Rapoport H., 2013, “Migration and cross-border financial flows”, CReAM Discussion Paper, 13(17), 29.

one. Revoking such an agreement might have important consequences for the European project. While this risk is difficult to gauge, it can certainly not be ignored.

Figure 3: What have been EU's most positive results among the following?



### **III. Conclusion**

Rolling back the Schengen Agreement and reintroducing border controls would generate unavoidable friction that would have an impact on the movement of people, goods and services, as well as economic activity.

In the short run, the traffic jams due to border controls at the main checkpoints would directly affect travellers – especially same-day visitors – cross-border commuters and freight traffic. Depending on the different hypotheses, we assess the short-term direct costs related to these impacts to be between one and two billion euros per year. This evaluation does not take into account the necessary budget for implementing the controls.

In the long run, different studies suggest a decrease in bilateral trade between countries belonging to the Schengen Area of more than 10%, which can in turn induce a drop of 0.8% in the zone's GDP. The loss for France is estimated at around 0.5% of GDP, amounting to more than 10 billion euros.

In addition, further impacts can be expected on financial flows, but these effects are difficult to assess. Last but certainly not least, the risk posed to the future of the European project should also be taken into account.