

# Impact of the refugee crisis on logistics/supply chains



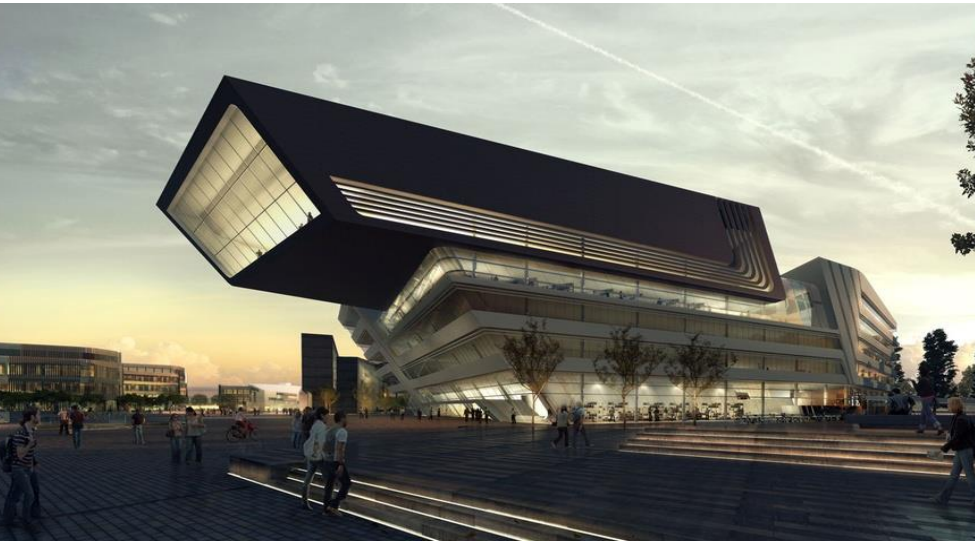
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# Agenda



- 1. Introduction**
- 2. The European refugee/migration crisis**
  - 2.1 Political measures**
  - 2.2 Company measures**
- 3. Impacts of the refugee crisis on logistics/supply chains**
- 4. How to change things for a better future**



# 1. Einführung



- 1982-87 Economics Business Administration and Philosophy at the University of Tübingen and Cologne,
- 1987-97 Dissertation (Phd) and Habilitation at Wissenschaftliche Hochschule für Unternehmensführung Koblenz (WHU)
- 1996-01 Chair of business administration, esp. Management of transport companies, Dresden University of Technology

Since 2001

- Head of the Institute for Transport economics and logistics management, WU-Vienna
- President of the German court of arbitration

Sebastian Kummer was Head of the Research Institute for SCM, WU-Vienna (2005-2011), Executive Director European section of the MIT Forum Supply Chain Innovation (2006-2011). He is member of several scientific and company boards. He is/has been visiting professor and lecturer at universities in China (Beijing, Changchun, Chengdu, Tianjin; Xi'an), Indonesia (Yogyakarta), Philippines (Manila UP), Vietnam (Hanoi), Russia (Moscow, St Petersburg), Ukraine (Kiev), Germany (Hamburg, Marburg, Zittau), Lichtenstein, Switzerland (Chur, Zürich), Austria (Leoben, Krems). He has published more than 150 publications. He works as a adviser, consultant and management trainer for companies and government bodies.

# The Institute of Transport and Logistics is since 90 years one of the leading institutes in the field of Transport, Logistics and Supply Chain Management



- Founded 1921
- In cooperation with Companies Associations and the Austrian government we solve practical as well as theoretical problems.
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  - Transport and Logistics
  - SBWL Supply Networks and Services
- Master Supply Chain Management
- Doctorial and PhD Programm
- Executive education: Universitätslehrgang Logistik & Supply Chain Management



<https://www.facebook.com/pages/Institut-f%C3%BCr-Transportwirtschaft-und-Logistik/521207991257990>



<http://wu.ac.at/itl>



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# Situation in summer 2015

**Threatening increase of refugees crossing the borders in central and Eastern Europe**

**Many refugees are facing big challenges**

**Nearly complete failure of the EU and the national administration the solve the problems**

**Political action starts:**

- Hungary is closing their boarder by building a fence
- Austria and Germany are introducing boarder controls
- Political negotiations within the EU states and with turkey

## Background of this work

„So ist es unser aller Pflicht, statt etwas Schlimmes  
vorauszusagen, uns einzusetzen für jene Dinge,  
die die Zukunft besser machen können“

***Sir Karl Popper, Philosoph (1902-1994)***  
*in „Alles Leben ist Problemlösen“  
zur Pflicht der Forscher*

**„It is our duty  
instead of forecasting poor  
developments to stand up to  
change things for a better future“**

- 1. What is the short term impact of the European refugee/migration crisis**
- 2. What might be the long term impact of the European refugee/migration crisis**
- 3. What could be a state of the art border design/operation for the Austrian and German borders**



# How to find more or less scientifically sound answers in few days

- 1. Use existing data (in our case transport costs calculation and knowledge)**
- 2. Use existing process know how and experiences for benchmarking (Same or similar processes – in our case historic data experience from the past, e.g. pre Maastricht /Schengen and best practice us-Canadian boarder)**
- 3. If you are not sure phone and speak with people who have the challenges and/or might have good ideas**
- 4. Don't be afraid of failure and shit storms and think what is right for the society**



## 2. The European refugee/migration crisis

# The European refugee crisis

The European refugee crisis, also European migration crisis describes the period beginning in 2015 when a rising number of people arrived in Europe through mainly the

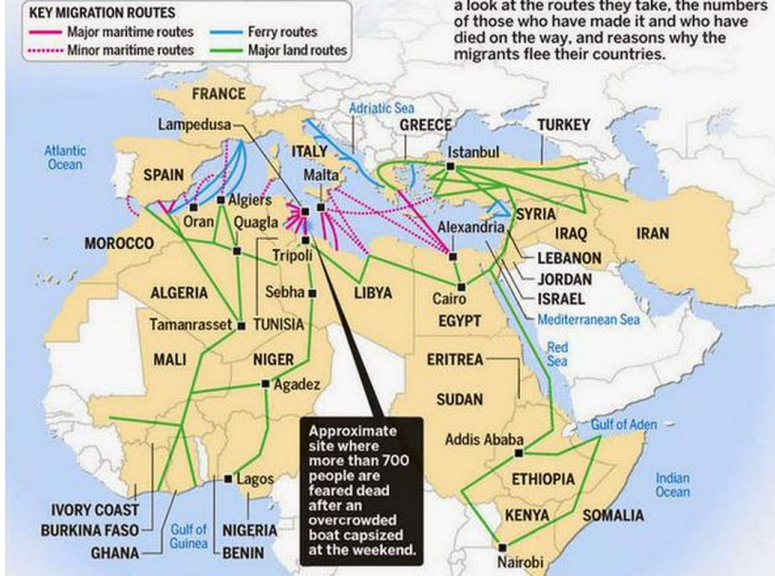
- Mediterranean routes (Western, Central, East Med) and
- Balkan route (overland through Southeast Europe (biggest increase in 2015),

when the political and administrative systems within Europe (EU and national states) were not able to cope with the challenges in a appropriate manner.

# The european refugee crisis

## Deadly voyage

Packed into rickety vessels by people smugglers, the path desperate migrants take to reach Europe across the Mediterranean is a dangerous one. Here is a look at the routes they take, the numbers of those who have made it and who have died on the way, and reasons why the migrants flee their countries.



Source: <http://www.zerohedge.com/news/2015-09-04/europes-refugee-crisis-solved-egyptian-billionaire-has-solution>

## MOVEMENT OUT OF TURKEY AND ONWARD MOVEMENT FROM GREECE AND BULGARIA



Source: adapted from <https://data2.unhcr.org/en/documents/download/57696>

# The european refugee/migration crisis

Route		2009	2010	2011	2012	2013	2014	2015	2016
Central Mediterranean	Sea	11.043	4.450	64.261	15.151	45.298	170.664	<b>153.946</b>	<b>181.459</b>
Circular route from Albania to Greece	Land	40.250	35.297	5.269	5.502	8.728	8.841	<b>8.932</b>	5.121
Eastern Land Borders	Land	1.335	1.052	1.049	1.597	1.316	1.275	<b>1.927</b>	1.349
Eastern Mediterranean	Land+Sea	39.975	55.688	57.025	37.224	24.799	50.834	<b>885.386</b>	182.277
Western African	Land	2.244	196	340	174	283	276	<b>874</b>	671
Western Balkans	Sea	3.089	2.371	4.658	6.391	19.951	43.357	<b>764.038</b>	130.261
Western Mediterranean	Sea/Land	8.281	6.570	11.793	9.236	11.067	9.737	<b>8.268</b>	11.821
Total		106.217	105.624	144.395	75.275	111.442	284.984	<b>1.823.371</b>	512.959

156% 540% 72%

Frontex data, real numbers are higher!

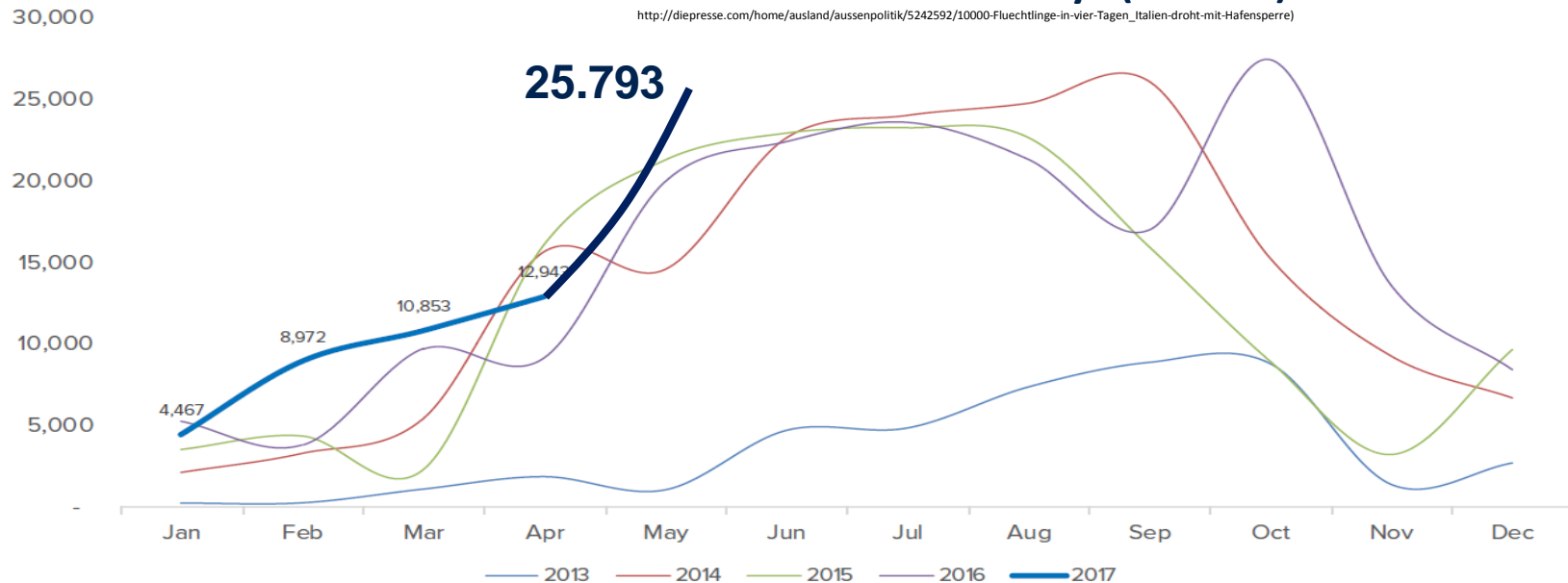
Source: Own calculation based on frontex data

# The european refugee/migration crisis

## Monthly sea arrivals to Italy 2013 – May 2017

**10.000 rescued in 4 days (26.4.17)**

[http://diepresse.com/home/ausland/aussenpolitik/5242592/10000-Fluechtlinge-in-vier-Tagen\\_Italien-droht-mit-Hafensperre](http://diepresse.com/home/ausland/aussenpolitik/5242592/10000-Fluechtlinge-in-vier-Tagen_Italien-droht-mit-Hafensperre)



Source: <https://data2.unhcr.org/en/documents/download/57696>  
adapted using frontex data



## 2.1 Political measures

# Political measures and their impact on SC

Failure of the the political and administrative systems within Europe (EU and national states) to cope with the challenges in a appropriate manner:

1. Administration especially coping with asylum applications the direct implications for the supply Chains are limited but of course this problems together with other reasons lead to boarder controls within the Schengen area. By the way at the end the German government asked Frank Jürgen Weise, wo was a Logistics Manager and Entrepreneur to solve the German Problems.
2. Enforcing the Borders within the EU and the Schengen Area. Hungary build a fence. Border enforcements also in Austria at critical border crossings. Effect of the supply chains was a move of the refugees/migration flows within a region to the boarder crossings and circumnavigation of large areas like Hungary.
3. (Re)Introduction of (temporary) boarder Controls lead to long (especially peak times) and unpredictable border waiting times.



# Hotspots for impact on SC



(Re)Introduction of (temporary) border Controls lead to long (especially peak times) and unpredictable border waiting times.

1. Eurotunnel at Calais, many blockings lead to longer waiting times and strict control of trucks.
2. Trains between Hungary and Austria and Austria and Germany blocked for weeks
3. Austrian-German boarder near Salzburg still longer waiting times and traffic janes
4. Brenner
5. Slovenian-Austrian Border

# Austrian Border Control

⊖ Kontrollen durch Österreich    ⊖ ... durch jeweiliges Nachbarland

16. September (Auswahl) 2015



Source: APA



## **2.1 Company measures**

Nearly all companies with critical supply chains had emergency plans and learned from the challenges like flying ash problems in air transportation or the supply chain interruption during the Arabic spring. As the problems didn't occur within hours they changed the logistics processes, especially JIT and JIS processes textbook wise:

1. Buffer times in transportation.
2. Additional Buffer stocks
3. Additional transport capacity
4. Priorization and flexible loading and deloading of trucks on the critical routes.
5. Only little transport mode shifts from Truck to rail.

1. **BMW, Steyr** distributes every day nearly 3000 Motors to Germany.
  - Buffer time in Transportation and
  - Priorization and flexible loading and deloading
2. **Magna Steyr, Graz** (Car production and supplier) is using additional transport capacity due to longer transportation times and bypassing critical borders. Bigges problem is the variety an unpredectibility of the border situation
3. **Hella Fahrzeugteile GmbH, Großpetersdorf** (Supplier) used a buffer of 3 Hours at every distribution to the OEM Stunden bei jeder Auslieferung eingeplant". Transports to central warehouse have a average additional transport time of app. 1 hour
4. **Miba, Upper Austria** tries to use railway
5. **Flextronics, Althofen** uses additional buffer times



### 3. Impacts of the refugee crisis on logistics/supply chains



## **3.1. Short term impacts mainly increasing transportation costs**



# Short term impacts cargo

During the first month more or less 1 hour additional transport time due to control an traffic jams before the boarder control. Now 15 Minutes but very much depending on time and traffic situation. A rough estimation showed total costs of these controls at the Austrian borders of 200-300 Mio €. But including transit transports and not considering the benefits of the boarder controls.

km	100	200	300	400	500	600	700	800
Cost without bc	150	252	349	444	544,45	645,22	745,95	846,64
Costs with bc	200	302	399	494	594,45	695,22	795,95	896,64
	133,3%	119,8%	114,3%	111,3%	109,2%	107,7%	106,7%	105,9%

The calculation shows the problem of boarder controls, as they are fix costs short transports suffer more from them as long hauls that means that cross boarder clusters are suffering the most.



# Short term impacts tourism

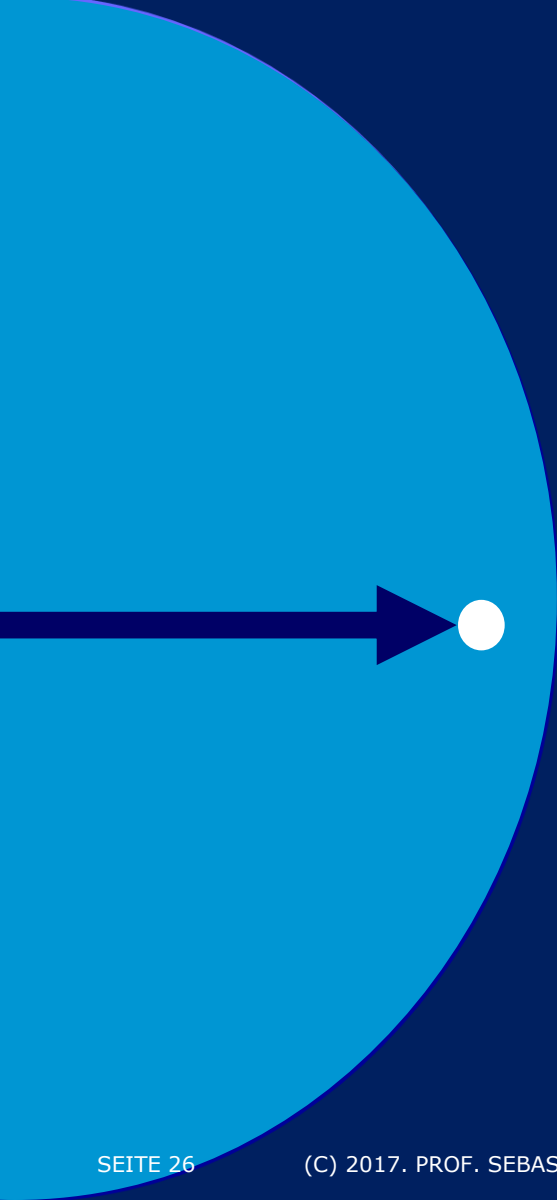
Salzburg Hbf.

Abfahrt		Departure	18:25:21	OBB INTRA
Zeit time	Erwartet estimated train	Zug train	nach to	Bahnsteig platform
18:30		SLB S1	Lamprechtshausen Bergheim-Schleichthof-Muntigl- Siggenwiesen-Anthering-Acharling- über Freilassing	11
18:30		SR 39540	Frankfurt (Main) Hbf unbestimmt verspätet	7
18:39		REX 3035	Linz Hbf Straßwalchen-Oberndorf-Zell am Moos-Pöndorf- Frankenmarkt-Vöcklamarkt-Redl-Zigst-Timelkam-	3 D-F
18:42		S3	Bad Reichenhall Salzburg Taxham Europark- Salzburg Liefering	7 D-F
18:52		west	Wien Westbahnhof Wien Hütteldorf	5 A-B
18:56		RJ 66	München Hbf	3 D-F
19:00		RJ 66	Innsbruck Hbf über Kufstein-Wörgl Hbf-Jenbach	3 A-C
19:00		SLB S1	Lamprechtshausen Bergheim-Schleichthof-Muntigl- Siggenwiesen-Anthering-Acharling- Salzburg	11
19:06		R 27096	Landshut (Bay) Hbf ~ Ausfall / Cancelled St. Johann im Pongau-Schwarzach-St. Veit- und	
19:08		REX 1514	Wörgl Hbf Lend-Taxenbach-Rauris-Bruck-Fusch-	1 A-B

+++Eine Information für Reisende nach Deutschland: Der Zugverkehr wird auf Anweisung der deutschen Behörden bis auf weiteres eingestellt.

As traffic jams especially occur at peak times the weekend (ski) tourism suffered from the boarder control.

Also railway services profit from the traffic jams



**3.2. If border controls  
within the EU will  
be (re)established  
the gains from the  
Schengen  
treatment would  
be lost**

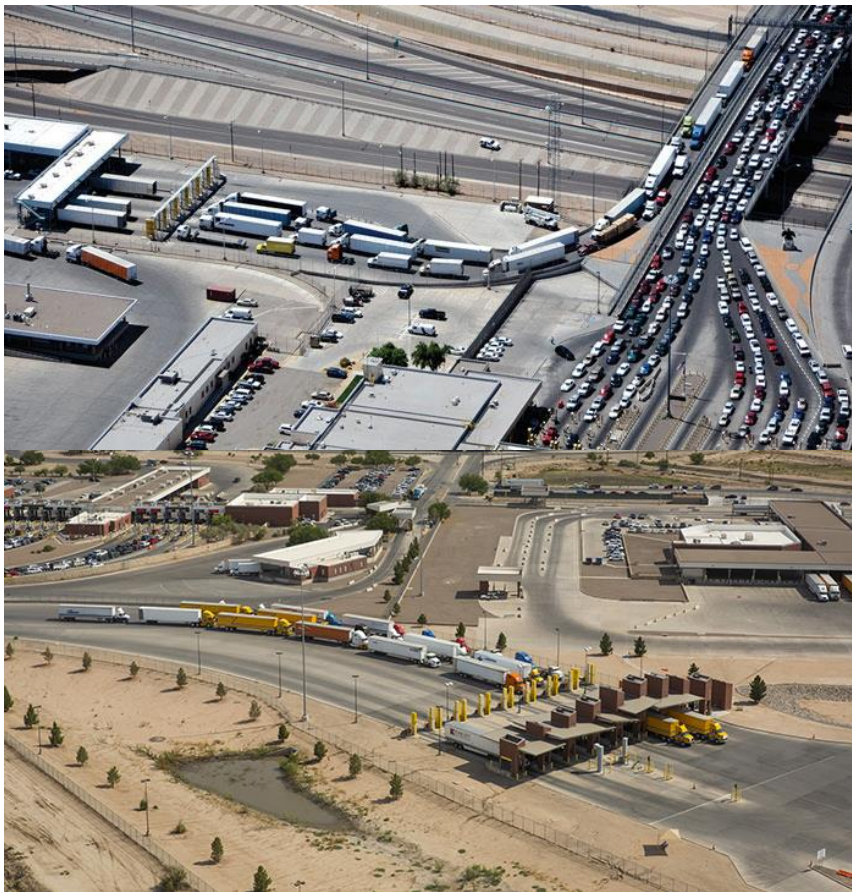
# Long term impact on Supply Chains

If the border controls would be a permanent measure this could have a negative impact on the supply chains and companies would rethink their supplier network because longer distances suffer relatively less than shorter distances the for Austria most important Austria-Germany trade would suffer



## 4. How to change things for a better future

# Design of border Infrastructure US-Canada; US-Mexico more than 11 Mio trucks





- Transparency helps
- Showing the impacts lead to “flexible” controls.
- Enforce border controls at the EU borders not inside the EU
- If necessary than adopt the design of border crossing and or activate the old infrastructure
- If border control will be permanent design processes for trucks that cross the border more often using ICT Technologies and certificates as been used in air cargo



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