Dependence of EU member states' domestic oil consumption on oil imports from Russia and the EU oil embargo[8]

Die öffentliche Aufmerksamkeit fokussiert vor allem auf die direkten Importe von Erdöl (Rohöl und Erdölprodukte) aus Russland und sieht daher besonders große Unterschiede zwischen den EU-Mitgliedstaaten in der Abhängigkeit von Erdöl aus Russland. Für etliche EU-Länder, insbesondere für jene mit einem niedrigeren Anteil dieser direkten Importe an ihren gesamten Erdölimporten, wie im Falle Österreichs, sind die indirekten Importe aus Russland jedoch viel bedeutsamer. Indirekte Importe sind Importe, vor allem von Erdölprodukten, aus anderen EU-Ländern, die ihrerseits zuvor diese Volumina, vor allem in Form von Rohöl, aus Russland importiert haben. Eine Analyse des Gesamtanteils der direkten und indirekten Erdölimporte aus Russland an den jeweiligen gesamten Erdölimporten zeigt, dass viel mehr EU-Länder letztlich Russland als wichtige Quelle ihrer Erdölimporte haben und diesbezüglich eine geringere Heterogenität innerhalb der EU besteht. Dennoch befinden sich die EU-Länder mit einem überdurchschnittlichen Gesamtanteil zumeist in Zentral-, Ost- und Südosteuropa (CESEE).

Der passende Maßstab zur Beurteilung der Abhängigkeit des inländischen Erdölverbrauchs (durch Unternehmen und Haushalte) von Importen aus Russland ist das Verhältnis von jenem Teil der gesamten (direkten und indirekten) Erdölimporte aus Russland, der die gesamten Erdölexporte übersteigt, zum inländischen Erdölverbrauch. Im Jahr 2020 waren wirtschaftlich gewichtigere EU-Länder mit besonders großer Abhängigkeit von Erdölimporten aus Russland die Slowakei, Polen, Tschechien, Ungarn, gefolgt von Finnland und Österreich.

Zur Beurteilung der Abhängigkeit des gesamten inländischen Energieverbrauchs von Erdölimporten aus Russland muss die soeben beschriebene Verhältniszahl mit dem Anteil des inländischen Erdölverbrauchs am inländischen Gesamtenergieverbrauch multipliziert werden. Dieser Anteil variiert zwischen den EU-Ländern beträchtlich. Er ist deutlich höher in südeuropäischen EU-Ländern, aber auch in Luxemburg, Irland, den Niederlanden, Deutschland und Österreich als in EU-Ländern in CESEE. Die resultierende Maßzahl für die Abhängigkeit des inländischen Gesamtenergieverbrauchs von Erdölimporten aus Russland ist in kleinen Nicht-CESEE EU-Ländern wie Malta, Zypern und Luxemburg besonders hoch. Unter den wirtschaftlich gewichtigeren EU-Ländern war im Jahr 2020 dieses Abhängigkeitsmaß in der Slowakei, Polen und Ungarn trotz ihrer unterdurchschnittlichen Anteile des Erdölverbrauchs am Gesamtenergieverbrauch am höchsten, gefolgt von Österreich und Tschechien. (Allerdings könnte sich seit 2020 die Herkunft der Erdölimporte in einigen EU-Ländern, wie z.B. Polen und Finnland, bereits deutlich verschoben haben.) Für Österreich ergibt sich für das Jahr 2020 eine noch höhere Abhängigkeit, wenn auch die direkten Importe aus Kasachstan und Turkmenistan, die Russland durchqueren, inkludiert werden.

Bei der Umsetzung des EU-Erdölembargos ist die entscheidende Herausforderung, dies als wirklich gemeinsame Anstrengung anzugehen. Dies hängt wiederum an zwei Fragen: Erstens, in welchem Ausmaß verringern EU-Länder ihre Erdölexporte in andere EU-Länder in Reaktion auf ihre Einschnitte bei ihren direkten Erdölimporten aus Russland? Dies hängt vom Ausmaß ab, in dem sie diese Importe durch Importe aus anderen Herkunftsländern substituieren können. Für Österreich ist der laufende Erfolg Deutschlands bei dieser Substitution besonders wichtig, da im Jahr 2020 25% der österreichischen Erdölimporte aus Deutschland stammten. Zweitens, in welchem Ausmaß verringern die EU-Länder, auch Österreich, den Anteil von Erdöl an ihrem Gesamtenergieverbrauch mittels Energie-Einsparungen und erneuerbaren Energien?

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Dependence of EU member states' total domestic oil consumption on oil import (import of crude oil and oil products) from Russia, 2020

For each indicator, color for ...
... bucket 1 (rank 1 to 3)
... bucket 2 (rank 4 to 6)
... bucket 3 (rank 7 to 9)

	Direct import	Indirect import	Sum of Dir. + Indir. Imp.	After deducting total oil exports of the respective EU member state:				Plus oil transiting through Russi
	1	2	3 (= 1 + 2)	4	5	6	7 (= 5 * 6)	8 (= 7 + ...)
	Direct import from Russia in % of total oil import	**Indirect import from Russia** in % of total oil import	**Direct and indirect import from Russia** in % of total oil import	**Direct and indirect import from Russia net of total oil export** in % of total oil net import	**Direct and indirect import from Russia net of total oil export** in % of total domestic oil use	***Total domestic oil use*** *in % of total domestic energy use*	**Direct and indirect import from Russia net of total oil export** in % of total domestic energy use	**... Including direct import from Kazakhstan and Turkmenistan transiting through Russia** in % of total domestic energy use
Slovakia	77.8	17.8	95.6	90.7	88.2	21.5	18.9	20.3
Finland	66.2	4.3	70.5	35.8	39.6	22.8	9.0	9.0
Lithuania	58.7	6.6	65.3	0.0	0.0	37.1	0.0	26.1
Poland	57.4	7.8	65.2	59.6	59.3	29.6	17.5	20.4
Estonia	49.6	50.4	100.0	100.0	0.0	-4.3	0.0	0.0
Bulgaria	48.6	10.4	59.0	31.1	31.9	23.6	7.5	7.5
Hungary	47.7	24.2	71.9	58.7	51.8	27.9	14.5	15.9
Romania	34.1	12.0	46.1	7.7	5.0	29.8	1.5	13.4
Czechia	28.8	35.6	64.4	57.0	58.5	21.1	12.4	13.8
Germany	27.5	7.4	34.9	20.2	20.8	34.1	7.1	9.7
Greece	23.2	2.2	25.4	0.0	0.0	46.6	0.0	0.0
Croatia	20.8	21.5	42.3	0.0	0.0	33.1	0.0	0.0
Netherlands	17.6	5.6	23.2	0.0	0.0	36.8	0.0	0.0
Slovenia	14.8	26.4	41.3	0.0	0.0	29.5	0.0	0.0
France	13.3	7.1	20.4	4.2	4.4	28.3	1.2	3.6
Italy	13.1	4.0	17.1	0.0	0.0	31.9	0.0	0.0
Denmark	9.5	6.1	15.6	0.0	0.0	36.3	0.0	0.0
Latvia	7.5	71.2	78.7	75.0	96.3	31.2	30.1	30.1
Sweden	6.6	17.2	23.9	0.0	0.0	21.9	0.0	0.0
Spain	6.5	3.7	10.2	0.0	0.0	40.0	0.0	0.0
Belgium	6.1	15.9	22.0	0.0	0.0	36.4	0.0	0.0
Austria	5.9	45.0	50.9	38.1	38.3	34.0	13.0	21.7
Ireland	4.6	3.4	8.1	0.0	0.0	44.5	0.0	0.0
Portugal	3.6	3.6	7.2	0.0	0.0	41.7	0.0	0.0
Cyprus	0.0	27.5	27.5	27.5	33.5	85.0	28.4	28.4
Malta	0.0	20.9	20.9	14.8	127.8	41.4	53.0	53.0
Luxembourg	0.0	35.3	35.3	35.2	44.1	55.0	24.3	24.3
EU27	**25.9**	**0.0**	**25.9**	**4.6**	**5.1**	**32.1**	**1.6**	**4.5**
Median	**14.8**	**12.0**	**35.3**	**7.7**	**4.4**	**33.1**	**1.2**	**7.5**

Source: Eurostat, IEA, Russian Customs Authority, UN Comtrade, OeNB estimate. Note: EU27 aggregate: Extra-EU oil import and export are taken for total oil import and export.
Item "direct and indirect import from Russia net of total oil export" set equal to zero if negative. "Total domestic oil use" and "total domestic energy use" are defined as the sum of domestic production plus net volumes from storage plus imports minus exports. In the case of Estonia, Latvia, Malta and Luxembourg, there were very large negative net volumes from storage (stock increase).

This note provides a brief descriptive analysis that relates to imports, exports and domestic consumption of oil, comprising both crude oil and oil products measured in terms of their energy content, with consumption comprising the use by both households and companies. Total domestic consumption, i. e. use, of oil (or of total energy as the aggregate of all types of energy) is defined as the sum of domestic production plus net volumes from storage plus imports minus exports of oil. This note relates to the year 2020. Hence, there is the caveat that structural changes since 2020 are not captured by the data analysis. Such changes have likely occurred especially in the Baltic countries and in Poland, after Putin's threats against Ukraine in the context of the military build-up of the Russian army since the first quarter of 2021. Moreover, further changes have already taken place in recent months. For instance, Austria reduced its direct oil imports from Russia to almost zero.

Each EU member state's degree of dependence on oil imports from Russia relative to that of other EU MS hinges on the concept applied, as can be seen also from the Table above:

- Looking at the share of direct oil imports from Russia in total oil imports (Table column 1), 8 of the 9 most dependent EU MS ("Top-9") are CESEE EU MS, with the exception being Finland. The EU27 aggregate share is 26%, based on extra-EU oil imports as denominator. The median is about 15%, with the min-max-range from 0% to 78% (Slovakia SK).

- However, for several EU MS, including Austria, indirect oil imports from Russia (oil imports that enter as imports from other EU MS which had imported these oil volumes from Russia) are far more important than direct ones. Indeed, only 3 of the Top-9 with respect to direct oil imports are among the Top-9 with respect to the share of indirect oil imports from Russia. The median is 12%, with the min-max-range from 0% to 71% (Latvia LV) (Table column 2).

- Nevertheless, 8 of the Top-9 with respect to direct oil imports are among the Top-9 with respect to the combined share of direct and indirect oil imports from Russia in total oil imports (Table column 3). Again, 8 of them are CESEE EU MS. The median is about 35%, with the min-max-range from 7% to 100% (Estonia EE). The fact that the median of this measure is considerably higher than the median of only direct imports signals that considerably more EU MS have Russia as important ultimate source of their oil imports**. Looking at total oil imports, there is less heterogeneity in the dependency on Russian oil among EU member states.**

- However, several EU MS, including 4 of the Top-9 with respect to the combined share of direct and indirect oil imports from Russia, have large oil exports, including to other EU MS. Thus, subtracting total oil exports and relating the net item to total domestic oil consumption (which also excludes exports) yields a more appropriate concept of dependence of each country (Table column 5). According to this measure, 4 non-CESEE EU MS enter the Top-9, including Austria on the 9th position. The EU27 aggregate share is 5.1%, based on extra-EU oil exports. The median is 4.4%, with the min-max-range from 0% to 96% (LV), if the value of 128% for Malta is considered an outlier (as imports from Russia serve only to increase the oil stock). Austria has a share of about 38%.

- At the same time, the share of oil in total domestic energy consumption varies considerably among EU member states (Table column 6). It is typically substantially

higher in Southern European EU MS than in CESEE EU MS. Thus, among the Top-9 with respect to the share of oil in total energy consumption, there is only one CESEE EU MS, while there are also Luxembourg and Ireland among the Top-9. The EU27 aggregate share is 32%, the median is about 33%, with the min-max-range from 21% to 85% (CY), if the value of -4.3% for Estonia is considered an outlier (as total imports serve only to perform exports and increase the stock of oil). Austria has a share of 34%.

- **Considering the weight of oil in total domestic energy consumption, the resulting share of the net item[9] in total domestic energy consumption shifts a bit away from CESEE EU MS** (Table column 7). That is, among the Top-4 according to this measure, there are 3 small non-CESEE countries (MT, CY, LU). They receive all Russian oil indirectly as shipping oil, with the small absolute amounts involved not posing major substitution problems.

  Still, the remaining 6 among the Top-9 are CESEE EU MS plus Austria, with Hungary on the 7th and Austria on the 8th position. The EU27 aggregate share is 1.6%, the median is 1.2%, with the min-max-range from 0% to 30% (LV), if the value of 53% for Malta is again considered an outlier. Hungary has a share of 14.5%, Austria 13.0%.

- Including direct oil imports from Kazakhstan and Turkmenistan, which transit Russian territory, lifts the EU27 aggregate share to 4.5% and the median to 7.5%, and it raises the share for two EU member states quite significantly, namely for Lithuania to 26% and for Austria to about 21.5%, shifting Lithuania to the 4th and Austria to the 6th position among EU27 (Table column 8).

Obviously, it is important to be aware of the heterogeneity within the EU27 with respect to the dependence on oil imports from Russia. This heterogeneity is particularly pronounced when looking at the share of direct oil imports only, which is a measure widely reported in the media. Heterogeneity is clearly less pronounced than at first glance when including indirect imports from Russia via other EU MS. However, it remains significant. **Therefore, when implementing the EU27 oil embargo, one of the main questions will be whether this will be performed as a joint effort, including by providing mutual support.**

- The question will arise to what extent EU MS will reduce their oil (re-)exports to other EU MS in response to cutting their direct oil imports from Russia. This will likely depend on the extent EU MS can substitute these imports by imports from non-Russian sources. **Germany's ongoing substitution success will be important for Austria, as 25% of Austria's oil imports stemmed from Germany in 2020, mainly in the form of diesel.** Note that the EU oil embargo exempts imports of pipeline oil from Russia (temporarily). This benefits several EU MS that belonged to the COMECON (CZ, SK, HU, PL and DE due to East-Germany) and are connected through the Drushba (Friendship) pipeline. However, Poland and Germany declared not to make use of this exception. Under this exception, it is generally not allowed to re-export these oil imports to other EU MS, apart from a further 18-month-exception for Slovakia to re-export to Czechia. Alleged Hungarian claims for the right to re-export and thus gain competitive advantage appear to have remained unfulfilled. In

[9] Net item defined here as direct and indirect oil imports from Russia minus total oil exports.

2020, Austria purchased 2% of its oil imports from Hungary, 5% from Slovakia and 1% from Czechia.

- Neither direct nor indirect importers of oil from Russia should rely exclusively on sufficient availability of non-Russian oil within the envisaged time horizon of the EU27 oil embargo. Thus, the question will arise to what extent will EU MS, including Austria as one of the indirect importers of oil from Russia, reduce the share of oil in their total domestic energy consumption by energy saving and by renewables both in the short-term and in the medium-term. Such steps would enhance energy security and independence, and they would help contain the increase of market prices for non-Russian oil that results from the shift of EU demand towards non-Russian sources.