



ZAGREBAČKA
BURZA

Zagreb Stock Exchange

**E
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Euro
introduction
by the
**Zagreb Stock
Exchange**

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Table of contents:

1	Introduction	1
2	Fixed Conversion Rate	1
3	Dual Display of Prices and Other Monetary Amounts	2
3.1	Exchange Price List	2
3.2	Dual Display on the Website	2
3.3	Dual Display in the ZSE Monitor Application	4
3.4	Dual Display in Daily and Weekly Reports	4
4	Trading	5
4.1	Last Day of Trading in the Kuna	5
4.2	Period of Trading System Adjustment to the Euro	5
4.3	System Parameters for the Euro	6
4.3.1	Classification of Shares in Continuous Trading and Low Liquidity Trading	6
4.3.2	Volatility Interruption and Limit Amounts	6
4.3.3	Iceberg Order	7
4.3.4	Tick Size Regime	7
4.3.5	Minimum Block Trades Size	7
4.3.6	Pre-Trade Controls: Maximum Order Value and Maximum Order Size	7
4.3.7	Cross Request	8
4.3.8	Market Making Requirements and Parameters	8
4.4	Market Value of Equities (Shares and ETFs)	8
4.4.1	Nominal Value and Share Capital of Share Issuers	9
4.4.2	Net ETF Asset Value (NAV and Indicative NAV)	9
4.5	Debt Securities and Money Market Instruments (Bonds and Treasury Bills)	9
4.5.1	Lot Size for Bonds and Treasury Bills Denominated in the Kuna	10
4.6	First Trading Day in the Euro	10
5	Exchange Indices / Benchmarks	11
6	ADH – Data Dissemination for Data Vendors	11
7	ZSE FEED – Data Distribution System	11
7.1	Reference Data File (ReferenceData.xml)	11
7.2	Market Data Files	12
8	Historical Trading Data	12
9	ZSE OTC service	13
10	Exchange Rules	13
11	Additional Information	13

1 Introduction

In accordance with the [National Plan for the Changeover of the Croatian Kuna to the Euro \(National Euro Changeover Plan\)](#), at its meeting on 13 May 2022, the Croatian Parliament adopted an Act on the Introduction of the Euro as the Official Currency of the Republic of Croatia (Official Gazette [NN 57/2022](#), hereinafter referred to as: **the Act**). The Act entered into force on 15 July 2022.

On 21 July 2022, the Croatian Government issued a Decision announcing the introduction of the euro as the official currency in the Republic of Croatia ([NN 85/22](#)), under which **the euro is to become Croatia's official currency as of 1 January 2023**. That Decision entered into force on 23 July 2022.

Further to the above, the Zagreb Stock Exchange, Inc. (hereinafter referred to as: **the Exchange**) identified the main areas and issues concerning the euro introduction within the scope of its business. These are outlined below.

2 Fixed Conversion Rate

The **fixed conversion rate** at which the national currency will be converted to the euro, as set out in [Council Regulation \(EU\) 2022/1208](#), is:

$$\text{€} \text{ EUR 1} = \text{HRK 7,53450}$$

3 Dual Display of Prices and Other Monetary Amounts

One of the key obligations of the Exchange arising from the Act concerns a **dual display, both in the kuna and the euro, of any information relevant to consumers using Exchange services**. In accordance with Article 47(11) of the Act, relevant information is deemed to include the amounts specified in the price list of Exchange services, as well as data on total turnover on a particular trading venue and the closing price of individual financial instruments listed on a trading venue in Croatia.

The period of mandatory dual display of prices and other monetary amounts begins on **5 September 2022 and will continue through the entire next year, ending on 31 December 2023**.

Any **relevant information specified above** is to be converted in accordance with the Act applying the fixed conversion rate, with the amount obtained rounded off to two decimals, based on the figure in the third decimal place:

- if it is less than five, the figure in the second decimal place remains unchanged;
- if equal to or greater than five, the figure in the second decimal place is increased by one.

The fixed conversion rate has been published on the Exchange [website](#).

3.1 Exchange Price List

Under Article 47(11) of the Act, any amounts specified in the [Exchange Price List](#) are deemed to be relevant information, so they are subject to dual display in both the kuna and the euro. The Exchange Price List has been adapted for the purpose of the euro introduction was approved by the Croatian Financial Services Supervisory Agency on 25 August 2022. The Price List, which has been in effect since 5 September 2022, has been published on the Exchange website.

The [Decision on fees](#) relating to educational services provided by the ZSE Academy was adopted on 24 August 2022 and entered into force on 5 September 2022 for the purpose of the euro introduction.

3.2 Dual Display on the Website

For trading days starting from 2010 until the end of 2023, the website contains a dual display of the following:

- total turnover (Aggregate Data) on the trading venue on the [web page with a daily trading overview](#):

Regular Turnover		Block Turnover		Total Turnover	
Equity Instruments	1,140,807.57 EUR 8,595,414.60 HRK	Equity Instruments	950,067.03 EUR 7,158,280.00 HRK	Regular Turnover	1,185,924.03 EUR 8,935,344.60 HRK
Exchange-Traded Funds	45,116.46 EUR 339,930.00 HRK			Block Turnover	950,067.03 EUR 7,158,280.00 HRK
				On-Exchange Turnover	2,135,991.05 EUR 16,093,624.60 HRK
				OTC Turnover	0.00 EUR 0.00 HRK

- individual financial instrument prices and turnover on the [web page with a daily trade overview](#):

Model	Symbol	ISIN	Currency	Last	% change	Time	Open	High	Low	VWAP	Volume	Turnover	Sector
CT	ADPL	HRADPLRA0006	EUR HRK	9.77 73.60	-4.42 %	14:56:12	9.95 75.00	10.14 76.40	9.56 72.00	9.85 74.22	3,489.00	34,366.79 258,936.60	CL
CT	ARNT	HRARNTRA0004	EUR HRK	30.53 230.00	-0.86 %	14:44:01	30.79 232.00	31.06 234.00	30.53 230.00	30.63 230.82	754.00	23,098.55 174,036.00	I
CT	ATGR	HRATGRRA0003	EUR HRK	47.51 358.00	0.00 %	12:40:38	47.51 358.00	47.51 358.00	47.51 358.00	47.51 358.00	58.00	2,755.86 20,764.00	G
CT	HT	HRHT00RA0005	EUR HRK	23.76 179.00	+0.56 %	15:06:56	23.62 178.00	23.82 179.50	23.49 177.00	23.63 178.01	4,408.00	104,140.62 784,647.50	JB
block	HT	HRHT00RA0005	EUR HRK	23.62 178.00	-	-	- 178.00	23.62 178.00	23.62 178.00	23.62 178.00	13,000.00	307,120.58 2,314,000.00	JB
CT	PODR	HRPODRRA0004	EUR HRK	73.00 550.00	-2.14 %	15:18:41	73.26 552.00	73.26 552.00	73.00 550.00	73.06 550.49	2,853.00	208,445.95 1,570,536.00	CA
CT	RIVP	HRRIVPRA0000	EUR HRK	3.82 28.80	0.00 %	15:17:21	3.81 28.70	3.84 28.90	3.80 28.60	3.82 28.76	17,310.00	66,063.49 497,755.40	I



Rows containing figures in the official currency on a given trading day are **marked in bold** in the table.

- last, low and high price of the last trading day, as well as historical data available on the page of the individual instrument:

(▲ 11,55 / ▼ 11,39) **11,55 EUR** ▲ 87,00 / ▼ 85,80 **87,00 HRK** **+3,33 %**

3.3 Dual Display in the ZSE Monitor Application

During the dual display period, real-time prices and turnover are available in the **ZSE Monitor** application in both currencies. The user is free to choose the columns with a dual display of amounts:

Security	Venue	%	Last [kn / €]	Qty	Bid	Ask	Spread	TOP	TOPPct
TPNG	ZSE	-0.79%	75.00 / 9.95						
PODR	ZSE	-2.14%	550.00 / 73.00						
HT	ZSE	0.56%	179.00 / 23.78						
SPAN	ZSE	-1.69%	232.00 / 30.79						
ATPL	ZSE	-4.25%	383.00 / 50.83						
ADRS2	ZSE	-2.33%	378.00 / 50.17						
RIVP	ZSE	0.00%	28.80 / 3.82						
7SLO	ZSE	-0.94%	125.80 / 16.70						
ADPL	ZSE	-4.42%	73.60 / 9.77						
HIMR	ZSE	0.00%	805.00 / 108.84						
PDBA	ZSE	-1.87%	210.00 / 27.87						
ZABA	ZSE	0.00%	64.80 / 8.80						
ARNT	ZSE	-0.86%	230.00 / 30.53						
TUHO	ZSE	-0.96%	4,120.00 / 548.82						
ERNT	ZSE	-0.32%	1,570.00 / 208.37						
ADRS	ZSE	-0.47%	420.00 / 55.74						
CTKS	ZSE	-4.35%	220.00 / 29.20						
PLAG	ZSE	0.00%	1,600.00 / 212.38						
KODT2	ZSE	0.00%	2,100.00 / 278.72	1	2,100.00	2,180.00	2	3.74%	

3.4 Dual Display in Daily and Weekly Reports

During the dual display period, subscribers to the daily and weekly reports of the Exchange will also have access to **additional reports**:

- in the euro, between 5 September and 31 December 2022;
- in the kuna, between 1 January and 31 December 2023.

The form of the daily and weekly reports remains unchanged.

4 Trading

The euro adoption entails **changes** to the following **trading system** elements:

- market prices expressed in the kuna;
- trading parameters, in line with the revised trading manuals;
- minimum lot size in respect of government bonds and treasury bills denominated in the kuna.

4.1 Last Day of Trading in the Kuna

The last day of trading in the kuna currency on the Exchange is **28 December 2022**. Trading will take place in the regular trading hours between 9:00 and 16:00.



In accordance with Article 175(1)(3) of the Exchange Rules, due to the change of the trading currency, **all orders in the trading system will be cancelled** on 28 December 2022 after the close of trading.

4.2 Period of Trading System Adjustment to the Euro

Based on a proposal put forward by capital market participants and in consultation with the Regulator, the Exchange adopted a **resolution** under which no trading on all segments of the regulated market and the multilateral trading facility – Progress market operated by the Exchange will take place on the XETRA T7 trading system on the 29 and 30 December 2022 to enable an efficient and secure transition to the euro by all Exchange members.



No trading will take place on 29 and 30 December 2022, but users will be able to access the trading system for the purpose of adjusting their software. The trading status will be **SUSPENDED** through the day (**as indicated by 'SUSP' in the trading system**) over that period.

It will be used to introduce adjustments to market prices and system parameters, which may be visible to trading system users.

The Exchange will not publish trading reports during the adjustment period. Data received from the trading system during the adjustment period will not be considered official data until 2 January 2023, as the first day of trading in the euro.

4.3 System Parameters for the Euro

Trading parameters coming into effect on 2 January 2023, as **the first day of trading in the euro**, are provided below.

4.3.1 Classification of Shares in Continuous Trading and Low Liquidity Trading



Under Article 209(1) of the Exchange Rules, the first classification of shares into **trading models** according to the criteria in the euro currency will take place on Friday, 6 January 2023.

4.3.1.1 Periodic Review of Liquidity Criteria

Any shares with at least one transaction a day on average or an average daily turnover of a min. EUR 2,000.00 over a period of 6 months are subject to continuous trading.

4.3.1.2 Fast transition to trading procedure Continuous Trading

Any shares with an average daily turnover of at least EUR 70,000.00 in the course of a trading week, with at least one transaction a day and at least 15 transactions a week, will transition from trading procedure Low Liquidity Trading to Continuous Trading.

4.3.2 Volatility Interruption and Limit Amounts

The dynamic and static limits for **volatility interruption mechanism activation** are expressed in percentage terms and will remain unchanged. However, changes will be made to the criteria for determining liquidity classes after 2 January 2023



On the first day of trading in the euro – 2 January 2023, the liquidity classes determined at the end of the preceding trading day, 28 December 2022, will apply.

4.3.2.1 Liquidity Criterion

When defining the criteria for applying volatility interruption mechanism shares and ETF units are divided into three classes according to the liquidity criteria taking into account the number of trading days and **the average daily turnover** in the last 6 (six) months.

Liquidity classes are the following:

Class 1 – in respect to any shares and ETF units traded on 75% of trading days for an average daily turnover in excess of EUR 15,000.00;

Class 2 – in respect to any shares and ETF units traded on 50% of trading days for an average daily turnover in excess of 7,000.00 EUR;

Class 3 – other shares and ETF units.

4.3.3 Iceberg Order

On entering iceberg orders, the total order value must be greater than **EUR 10,000.00**.

4.3.4 Tick Size Regime

Order entry is subject to the application of the tick size regime **according to the existing tick size table** included in Chapter 6 of the Trading Manual, **with prices to be expressed in the euro**.

4.3.5 Minimum Block Trades Size

The minimum size of block trades depends on the type of financial instrument:

Type of financial instrument	Block trade size
Shares	EUR 270,000.00
Government bonds	EUR 4,500,000.00
Corporate bonds	EUR 2,000,000.00
Municipal bonds	EUR 5,000,000.00
Treasury bills	EUR 1,500,000.00

4.3.6 Pre-Trade Controls: Maximum Order Value and Maximum Order Size

The maximum order value will be adjusted to the amounts in the euro currency. The maximum order size **remains unchanged**.



As an exception to the regular annual procedure for determining the maximum order value and maximum order size, under which new controls would be in effect as of 1 February, the pre-trading control thresholds for each financial instrument will be made public by 30 December 2022, **with the controls coming into effect as of 2 January 2023**.

4.3.6.1 Shares

Pre-trade thresholds for shares:

Free-float market capitalisation	Average daily turnover	Maximum order value	Maximum order size
≥ EUR 35 mil.	≥ EUR 15,000.00	EUR 3,500,000.00	10,000,000 pcs
≥ EUR 15 mil.	≥ EUR 1,500.00	EUR 1,000,000.00	5,000,000 pcs
< EUR 15 mil.	< EUR 1,500.00	EUR 500,000.00	1,000,000 pcs

4.3.6.2 EFT units

Pre-trade thresholds for ETF units:

- Maximum order value: EUR 150,000.00
- Maximum order size: 100,000 pcs

4.3.6.3 Bonds, commercial paper and treasury bills

Pre-trade thresholds for debt securities:

	Maximum order value	Maximum order size
Government bonds	EUR 10,000,000.00	99,000,000 pcs
Corporate bonds, commercial	EUR 2,000,000.00	20,000,000 pcs
Municipal bonds	EUR 4,000,000.00	50,000,000 pcs

4.3.7 Cross Request

The minimum value of the orders announced using Cross Request must, at the time of placing must be equal to at least EUR 13,000.00.

4.3.8 Market Making Requirements and Parameters

For the purpose of determining market making parameters, shares or ETF units are **assigned to three liquidity classes** according to the following requirements:

Class	Average daily turnover
1	> EUR 33,000.00
2	> EUR 13,000.00
3	≤ EUR 13,000.00

The **minimum volume** of bid and ask quotes to be issued by a market maker in the trading system is shown in the table below:

Class	Minimum quoted amount
1	EUR 4,600.00
2	EUR 1,900.00
3	EUR 1,300.00

4.4 Market Value of Equities (Shares and ETFs)

The **market value of shares and ETFs** admitted to trading or traded on the regulated market and the Progress Market will be converted by the Exchange and displayed in the euro on the day of the euro introduction, with the amount obtained by applying the fixed conversion rate to be rounded off to the nearest cent, in line with conversion and rounding rules set out in the Act.



Market prices expressed in the kuna (shares, ETFs) will be converted in accordance with the Act and **tick size regime** based on the closing prices on 28 December 2022, as the last day of trading in the kuna.

4.4.1 Nominal Value and Share Capital of Share Issuers

The nominal value and share capital of share issuers will remain unchanged in the Exchange trading system on the day of the euro introduction.

Under the Act, joint-stock companies are required to submit to the registration court, not later than one year after the introduction of the euro, a request to register a change in the amount of share capital and nominal value of shares to be implemented by applying the fixed conversion rate of the kuna against the euro and rounding the amount obtained to the nearest cent, in line with conversion and rounding rules set out in the Act. On the entry of such change in the court register, joint-stock companies are required to request, without undue delay, that the change also be entered in the Central Depository and Clearing Company, Inc (CDCC) system.

Once it has been notified by the CDCC that corporate actions have been implemented in the CDCC system, the Exchange will proceed to modify the nominal value and the amount of share capital of share issuers in its own system, in accordance with its acts.

4.4.2 Net ETF Asset Value (NAV and Indicative NAV)

The net value of ETF assets (NAV and indicative NAV) is calculated and published **according to the currency denomination** of a particular fund on a given trading day.

Indicative NAV is available in both currencies – the kuna and the euro – on the web pages of individual instruments over the dual display period.

4.5 Debt Securities and Money Market Instruments (Bonds and Treasury Bills)

The nominal value assigned to a debt security or money market instrument in the Exchange trading system will remain unchanged on the day of the euro introduction.



By way of exception, in respect of dematerialised debt securities issued in the kuna by the Republic Croatia, dematerialised money market instruments issued by the Croatian Ministry of Finance, and dematerialised debt securities issued in the kuna by the Republic of Croatia and indexed to reflect movements in the kuna exchange rate, the CDCC will carry out a **conversion of the nominal amount and volume** of debt securities and money market instruments and notify it promptly to the Exchange.

Under the Act, unless this is contrary to the terms of issue referred to in the issuing prospectus, an issuer of debt securities may decide within 18 months from the date of the euro introduction that the nominal value of a debt security or money market instrument be displayed in the euro instead of the kuna. Such optional conversion is subject to a resolution of the Meeting of the Holders of Debt Securities according to the procedure and under the terms laid down in the issuing prospectus. The resolution is to be communicated by the issuer to the CDCC not later than 30 days from the date of its adoption.

Once it has been notified by the CDCC that corporate actions have been implemented in the CDCC system, the Exchange will proceed to modify the nominal amount in its own system, in accordance with its acts.

4.5.1 Lot Size for Bonds and Treasury Bills Denominated in the Kuna



Given that **the order size for bonds and treasury bills is entered as a nominal amount**, the nominal value of the instruments will be converted from the kuna to the euro on entering the order size.

In accordance with the Act, the minimum lot size in respect of bonds and treasury bills denominated in the kuna will be the following:

Type	Minimum lot size
Government bonds	EUR 0.01
Treasury bills	EUR 13,272.2808
Corporate bonds	to remain stated in HRK
Municipal bonds	to remain stated in HRK

Historical volumes of transactions in government bonds and treasury bills denominated in the kuna executed before 1 January 2023 will **remain unchanged**.

4.6 First Trading Day in the Euro

Trading in the new currency – the euro – will commence on **2 January**, which is the first trading day in 2023.



As an exception from the **regular trading hours**, on the first day of euro trading, the opening auction under the continuous trading model will be extended: instead of ending at 9:30, **the opening auction will run until 11:00 hours**.

Trading hours on the first trading day in the euro currency:

Session	Trading model	
	Continuous Trading	Low Liquidity Trading
Pre-Trading	8:00 – 9:00	8:00 – 9:00
Main Trading:		
Opening Auction	9:00 – 11:00 ¹	9:00 – 11:00 ¹
Continuous Trading	11:00 ² – 12:00	11:00 ² – 12:00
Intraday Auction	12:00 – 12:10 ¹	12:00 – 14:00 ¹
Continuous Trading	12:10 ² – 15:55	14:00 ² – 15:00
Closing Auction	15:55 – 16:00 ¹	15:00 – 16:00 ¹
Post-Trading	16:00 ² – 16:25	16:00 ² – 16:25

1. the earliest ending, due to the variable ending of Opening Auction, Intraday Auction or Closing Auction, which may last up to 15 seconds.

2. earliest commencement.

The time for executing block trades **will remain unchanged** on the first day of trading in the euro, with trades to be submitted between 8:00 and 16:00 hours.

5 Exchange Indices / Benchmarks

On 30 December 2022, the Exchange will adjust all **exchange indices** to the euro by converting prices into the euro and calculating new divisors in the euro currency.

As of 2 January 2023, benchmarks and indices will be calculated in the euro.

Any historical values of all exchange indices before 1 January 2023 will remain unchanged.

6 ADH – Data Dissemination for Data Vendors

Real-time market data is available to distributors exclusively through the **ADH data feed** provided by the Vienna Stock Exchange.

No technical modifications to the ADH service for the purpose of the euro introduction are necessary. However, users should take account of the changes in market prices expressed in the kuna and units of size in respect of government bonds and treasury bills denominated in the kuna before the conversion, as specified in **Chapter 4**.

7 ZSE FEED – Data Distribution System

Given that the order size in respect of bonds and treasury bills is entered as a nominal amount and that treasury bills will have a nominal amount of EUR 13,272.2808 after the euro conversion, **the precision of all fields relating to size (Quantity, Volume) in XML format will be increased from 2 to 5 decimal places** as of 1 January 2023.



New XML schemes are published at <https://feed.zse.hr/schema> (filenames with a tag “euro”).

7.1 Reference Data File (ReferenceData.xml)

At the end of each trading day, reference data for the following trading day on the Exchange are available at:

<https://feed.zse.hr/ReferenceData.xml?version=2>

At the end of the last day of trading in the kuna, i.e. on 28 December 2022, the file will display data for **the first day of trading in the euro**. In accordance with **Chapter 4**, the euro adoption may affect the following data:

- Security → NominalValue
- Security → NominalCurrency
- Security → PrevClose
- Security → MinTradeUnit
- Security → MinOrderQuantity
- Security → MaxOrderQuantity
- Security → MinBlockValue
- Security → Iceberg → MinQuantity
- Security → Iceberg → MinPeakQuantity

7.2 Market Data Files

The Exchange will not change the formats or the names of market files. The files contain data in the official currency on the specific trading day. Any market prices which were previously expressed in the kuna will now be expressed in the euro.

In addition to the existing files containing **end-of-day market data**, alternative versions are exceptionally available as follows:

- the currently available file will contain prices in the **current currency** of the market:
 - until the euro introduction, market prices are expressed in the **kuna**;
 - after the euro introduction, market prices are expressed in the **euro**
- the alternative version will be available at the **fixed conversion rate**:
 - until the euro introduction, market prices are expressed in the **euro**;
 - after the euro introduction, market prices are expressed in the **kuna**

Overview of the files containing **end-of-day market data** and names of alternative files:

File name	Alternative file name
Trading-ZSE-daily.xml	Trading-ZSE-daily- alt .xml
Trading-ZSE-full-daily.xml	Trading-ZSE-full-daily- alt .xml
Trading-ZSE-weekly.xml	Trading-ZSE-weekly- alt .xml
Trading-PROGRESS-daily.xml	Trading-PROGRESS-daily- alt .xml
Trading-PROGRESS-full-daily.xml	Trading-PROGRESS-full-daily- alt .xml
Trading-PROGRESS-weekly.xml	Trading-PROGRESS-weekly- alt .xml
Trading-OTC-daily.xml	Trading-OTC-daily- alt .xml
Trading-OTC-weekly.xml	Trading-OTC-weekly- alt .xml

8 Historical Trading Data

Historical prices and turnover of financial instruments admitted to trading or traded on trading venues operated by the Exchange are **displayed dually**, in both the kuna and the euro, for the trading days from 2010 onwards on the Exchange website.

Historical reports converted into the euro are available upon request. Requests can be sent to the following e-mail address: vendor@zse.hr.

9 ZSE OTC service

In accordance with the Exchange's Resolution to change the Calendar of trading days 2022 ([Chapter 4.2](#)) adopted on September 8, 2022 and Art. 9. of the Terms and Conditions for the OTC debt financial instrument reporting, the Exchange will suspend the operation of the ZSE OTC service on December 29 and 30, 2022.

According to the usual practice for non-working days on the Exchange, transactions concluded on December 29 and 30, 2022, are reported on January 2, 2023, between 8:30 a.m. and 9:00 a.m.

The introduction of the euro has no effect on the process of reporting OTC transactions.

10 Exchange Rules

Adjustments to the [Exchange Rules](#) for the purpose of the euro introduction (Art. 8(2) and (7), Art. 20(1)(7), Art. 101, Art. 233(4), Art. 273(1)(1) and (2) and Art. 292(4)) will be implemented in the form of Amendments to the Exchange Rules, which will be submitted for approval to the Croatian Financial Services Supervisory Agency in October 2022.

[Manuals](#) will be amended, simultaneously with the Amendments to the Exchange Rules (Trading Manual and Market Makers Manual), and published on the Exchange website.

11 Additional Information

Any additional information on specific activities related to the euro adoption will be published by the Exchange on its [website](#).

Further questions related to the introduction of the euro may be addressed by e-mail to: pitanja@zse.hr.