

REASONABILITY OF WINE INVESTMENT IN THE CZECH REPUBLIC

T. Lintner

Received: November 30, 2011

Abstract

LINTNER, T.: *Reasonability of wine investment in the Czech Republic*. Acta univ. agric. et silvic. Mendel. Brun., 2012, LX, No. 2, pp. 181–188

The paper deals with the validity of bottled wine investment committed in the Czech Republic. The Agrarian sector of the Czech Republic went during last 20 years through several key changes. After the transformation process its facing the external competitive condition of the globalizing world, especially the one of the European Union common market. One of the Czech Agrarian branch, its wine sector, might play a positive role for the whole „industry“ in future. At present, there is an increasing trend of the volume of wine investment made not only on local market, but across the whole world as well. All crucial factors such as purchase, storage, ageing a saling process must be properly considered and evaluated. It deals with the principles of wine investment, revenue, risk of purchase and storage of the bottled wine including its liquidity. The process of choice of the appropriate wine for aging is outlined. It shows all possible complications and an approach to the regular investor. This paper using a critical overview on the actual publically spread opinion that the wine investment is a great opportunity compared to the others. The issue is whether to recommend an investment into bottled wine in respect of local market conditions.

aging of wine (maturity of wine), asymmetric information, investment, wine investment, competition, liquidity, risk, wine market, wine, return of investment

As there is a wine investment process more popular than ever before, we can see several various articles concerning this matter in daily newspaper, internet or other mass media in latest times. Most of the authors consider the wine investment opportunity into „God’s beverage“ as a lucrative matter. The actual situation is much more complicated than it appears. It requires to consider all aspects of the bottled wine investment process. The financial and economic crisis in last few years has substantially changed the economic condition wherein the investors are running their business. The original relative secure and profitable investments became more risky „overnight“ and went through several phases of bull and bear market. The investors are constantly looking for new „more secure“ commodities which could possibly produce guaranteed rate of profit to the client. The awareness of zero potential losses make the article

very attractive for the investors. The quality bottled wine belongs among such articles.

MATERIAL AND METHODS

This article is describing basic philosophy of the investment, primarily its solving the bottled wine commodity investment in these days. This thesis focuses on short term and mid term period. It defines fundamental investors’ terms comparing profitability, risk and liquidity of the realized investment. Its connected to the author’s thesis dated 2003 from the methodologic view. This article applies and contributes to the results of the research of agribusiness development trends and their reflection into CAP (Bečvářová, 2008). This thesis is also generating the situation in the field of wine market and wine investment including future course in the Czech Republic. Based on the research

(Bečvářová *et al.*, 2009) it defines the changes in globalizing world and is setting key conditions for improving competitiveness of the Czech agriculture, especially its branch of wine growers and wine makers.

RESULTS AND DISCUSSION

The real boost in wine investment was particularly caused by the world's economic depression in the years 2008 and 2009. As a consequence, many investors lost their properties in stocks. Thus, they might have considered and preferred wine as an alternative and attractive investment commodity (www.denik.cz). A research in the period of 1996–2000 about Russell index 3000, conducted by Suisse economists, compared approximately 400 K prices of wines and resulted in a clear statement that prestigious and high-quality wines generally increase the overall return on investment and reduce the risk of the investment portfolio (www.aktualne.centrum.cz). „The index Russell 3000 consists of the 3000 biggest „blue chip“ companies traded in the U.S. stock market“ (www.penize.cz). Apparently, the index made of the top class wines defeats the index Russell 3000 and the differences fluctuating between both figures were twice to five times bigger than was regular value of stock index. Mr. Zlatko Míčka, an expert in wine investment states that „the value of the bottled wine never fell under the purchased price“ (www.investujeme.cz). A major demand for the wine comes from eastern markets such as China, India or Japan. But the well-known wine market takes place in France, Bordeaux, where the wine business is so sophisticated. This market is having own stable rules where the investors are purchasing so called „En Primeur“ wines directly from traders. These wines are maturing in barrels and are waiting to be bottled soon, nevertheless they were not offered for sale yet. English definition represents the term „Wine futures“, so futures into the wine. The above described „liquid process“ takes place in most of the developed countries and broadly occurs in such form. The traders (wine experts) called „négociants“ are de facto purchasing tasted „En Primeur“ quality together with an entitlement for further purchases „futures“ for next seasons. This means that common time span between the grape harvest and investors supply might reach upto 3 years. Such way of purchase saves to the investor upto 20% from the original price compared to later price of the same, but already bottled wine (www.investujeme.cz). Among another relatively organized markets belong Spanish and Italian markets. A significant position in the European markets is having the LIV-EX 100, which is calculating 100 top-quality wines since 1999. These wines differ from vintage and varieties. The calculation of this index is based on the prices of traded titles. Wines are offered in so called „lots“ which equals 12 bottles á 0.75 lt. All prices of the titles are reflecting value of the production and

variety, so scarcity of the titles. The interesting role plays the fact that titles above 25 yrs of age are pulled off the market due to lower value and scarce of the vintage (www.liv-ex.com).

The situation with the wine investment in the Czech Republic is different from the rest of the world. Due to the increasing per capita consumption together with the public raising of wine acknowledgement are more and more customers purchasing bottles of wines either on internet or directly at the wine makers. Other ways such as wine shops, degustations are wide spread as well. This ensures to the wine traders new opportunities how to increase the revenues. On the other hand there is not fully organized wine market in the Czech Republic, which could enable the investors to meet the top quality wines. At presence, mostly the wine investors join so called „summer campaigns“ in order to acquire high quality wines (www.denik.cz).

The consumers are mostly purchasing bottles either for direct home usage or for private degustations. A different situation is observed in restaurant facilities. Such business requires either specialists so called „sommeliers“ or „flying vintners“. Those are the professionals for the wine investments who are following the latest trends in wine growing or wine making process and thus are passing on the new methods to the customers. The response from the customers and sommeliers (market) gives to the wine makers the feed back how should the desired wines taste like in future. The task of the sommelier is to assure such wine composition supply to meet the highest requirement of the clients and their demand. Today, most of the specialists are having good relationship with the wine makers already and are co-operating with them directly or indirectly. Nevertheless, a big volume of the wine purchases is still hanging on consumers. These prefer more and more internet way of purchase of high quality wines which supports also the trade deputy of Znovin Znojmo a.s., Mr. Opatril (www.omd.cz).

The volume of bottles sold through internet within last 5 seasons is annually increasing between 10% and 15% (www.dobravinoteka.cz). Still, most of the statistics show that customers prefer superstore purchase. However, the statistics differ from each others. As an example can serve the conference called „Contemporary trends in wine publicity“. This study shows that 40% of respondents are most likely buying wines in wine stores, 22% in superstores and only 2% of them directly at the wine maker. Small percentage answered that either on internet or at the restaurants. The above written fact supports the idea about opportunity of wine tourism connected to internet way of sale (www.eregal.ihned.cz).

The overview of the key factors which are influencing the customers are: 42% of respondents consider the wine maker as the most important, 29% rely on symphatizers, 13% prefer the price, 12% are

considering the package or label and only 4% reflect the advertising.

We can summarize above written trend as follows (see Tab. I).

I: *Criteria of wine selection according to the research*

| Ranking of the criteria | % respondents |
|-------------------------------|---------------|
| Type of wine | 30,4 |
| Price of the wine | 21,7 |
| Kind of the wine | 17,0 |
| Variety of the wine | 11,1 |
| Own experience | 10,6 |
| Territory /origin of the wine | 3,4 |
| Name of the wine producer | 2,2 |
| Vintage | 1,4 |
| Recommendation | 1,2 |
| Design of the bottle | 0,7 |
| Label | 0,3 |

Source: Chládková, H.

Wine investment

Another significant faktor of the existing development is an increasing public awareness about wine itself. The investment companies attract and ensure additional clients to use „the great opportunity of the liquid investment“ compared to other stocks, real estates or commodities. However, while taken the all aspect of the „nontraditional investment“ into the consideration, it is quite evident that the investment might go awry or at least to cost more than originally expected.

The investment is defined as a category, meaning flow of expenses to assure or enlarge the real capital foundation. These expenses usually guarantee further future incomes (Žák, 2002). Based on this definition its evident, that the investors will not buy the bottles just for the pleasure, but to receive the return and the payback period as soon as possible. While investing, minimum 2 elementary matters must be resolved:

- How much and when to invest
- In which type of wine should the investment take place.

There are several types of investment strategies to be applied. Most of them are preferring a maximalization of value of the company (property), profit or liquidity. However, the wine investment is obsessed by its own dangers. The investor must first of all set up the priorities what to expect from the wine investment and whether to invest into domestic or foreign wines. In order to reduce the risk and to make the best decision its highly required to possess absolute information about the planned investment (bottles of wine). Such situation might be solved by using information asymmetry model. Asymmetry information is simply defined as a market situation where one

party (the seller or the buyer) has got more or better information than the other during the transaction (Soukupová, 1996). Soukupová considers such anomaly as a kind of market failure due to imbalance of both sides'information. Such situation is created due to classified activity which is heavily noticeable without supplementary cost (Žák, 2002).

Apparently, there is almost never possible for the investor to obtain or all datas about the wine makers or to be convinced of the wine quality directly at one or more producers. There are several aspect during the process of grape processing and each of them teoretically can cause the asymmetry information problem. It is evident that in real life each market transaction will create an imbalance of power in transactions. The example of Information asymmetry are a moral hazard and an adverse selection. The adverse selection is solved out thanks to signaling.

During signaling one (informed) party is handing over to the other (less informed) party transparent information. This process, however, is mostly used with the connection to the high quality product, bcs. signalization costs arising from top quality product sale must be lower than the costs arising from lower quality product sale. In fact, long guarantee for the wine bottles is offered only by such wine producers or retailers who can supply only top products. This is why the investor must think about where to purchase the wine. It is generally recommended to purchase the bottles directly at the winery, at special wine stores and retailers or at the auctions or wine exchange. At the auctions are usually prices the highest in general (www.investujeme.cz). The another alternative is to hire a specialist who can help to „create“ top wine selection and though increase the value of the invested funds. Although, this duty is connected to relatively high transaction costs and reduces the total profitability of the investment. Also, it does not necessarily reduce the risk to minimum either.

The direct purchase at the winery assures the possibility to acquire the „wine genealogy“ and a simple degustation can help with the idea how the aging process will continue. Thus, the investor can avoid the situation that the investment goes awry or at least to minimize the risk of asymmetry information. This type of purchase mostly considers that the investor is an expert in the selection at the same time. Most of the wine producers are offering not only the desired vintages but also the vintage from past years. In fact, a lot of seasons are various and vintages can differ from each other. That is why the viniculturists are carefully observing their vineyards in order to „prepare“ relatively stable grape harvest with similar grape maturity. Wine producers are afterwards sufficiently experienced to supply top quality wines based on the origin. The wine makers are regularly harvesting the grapes from the same location so that they can use their „terroir“. This meaning comes from french term describing the area or the region which is

characterized own uniqueness in the form of soil type, geological conditions, climate, precipitation or weather including the human impact (www.terroir-france.com). This is the regional know-how what makes the wine producers to be successful.

This terroir definition was embodied into the Czech legislation process into Wine code No. 321/2004 under the so called term „VOC – Wines of Original Certification“. The Czech Republic belong among countries like France, Italy or Austria, which put emphasis on regional origin and quality together with viticulture techniques. Such model is passing from German principle based on the volume of sugar during ripening over to Roman model supporting the terroir where the grapes came from. These wines should at most represent their origin. VOC is the way to increase the quality (www.dobravinoteka.cz).

The wine maker's visit might help to the investor to judge what will be the evolution of the „invested sample“, at least in the short period of time. Each investor must evaluate the profitability, expected risk, liquidity and estimated result of the planned investment. An optimal investment is considered such action with maximal revenue (yield), minimal risk and high liquidity. It is quite difficult to meet such process in reality, more less the above written factors are usually in contradiction (Žák, 2002).

According to investors' preferences we can clarify the following investment strategies:

- maximal annual revenues strategy
- rise of the value of the investment strategy
- combination of the above described strategies
- aggressive strategy of the investment
- conservative strategy
- strategy of maximal liquidity.

The choice or combination of the above written strategies usually follows the investor's rules which have been set up at the commencement or is copying actual status of the existing investment into bottled wine. Mostly, as any other investments, the changes are made up based on price movement or aging of the bottles or based on the combinations of other factors influencing the investor's decision.

The principle of the wine investment

The principle of each wine investment is based on the assumption that the period of time in which the bottle of wine matures has to be properly estimated. The bottle of wine usually does not lose its value over time on the contrary wine creates higher value by ageing. On the other hand, only 0.2% of world's production of wine has got its potential being archived in the long-term (www.investujeme.cz). Ripped wine is usually sold in its „peak value“ and such value should reflect a price which the buyer is willing to pay for. The period in which the wine matures fluctuates between five to twenty years in general and depends on complexity and total character of wine. As a crucial factor of each investment, the wine must be carefully chosen if

the success should come true. Generally, it is not recommended make the long-term investment into the aromatic wines because its aroma and quality might plunge down easily. The quality of wine producer as well as wine origin has to be considered. Each investor has to rate also particular vintage which could be already estimated before the harvest comes. Only the top quality wines originated in well known regions and produced by certified, top ranked producers, make the value for an investor over time. We can see that mostly Moravia region and its unique wines completely fills the previous statement up, even though high volume demand makes it difficult to keep the standard of each batch of wine at the same level. Apparently, rapid and dynamic growth in turnover (due to higher consumer demand) might be even more risky for an entrepreneur than a drop in sales because of the fact that it could be a problem for the company to acquire additional resource of capital to cover the need of purchasing new assets. Also, the wine maker must usually keep the value not only of existing wines, but also to keep the goodwill in future, which is the most difficult task. There is quite a small, young market in the Czech Republic even there are already enough of wine makers producing high quality wines. The future trend shows what progress will be made in the field of wine investment. However, Moravian wines will have very difficult position among other foreign wines to hold the same quality in long run. Mostly, their quality decrease very fast after period of 7–10 years of age.

Profitability of the wine investment

For 90% of the wine producers are the costs of funds of the potential aging of bottles unacceptable. That is why, it is commonly spread to use private investors' capital or traders for such investments to reach maximal value of the profit. The wine makers capital is usually used for short-term (current) assets or long-term assets. Among such assets belong buildings, wine cellars, technologies, as well as the produced wines. Most of the above written items are financed not only by internal, but mostly by external sources. There are quite often happening that the value added of the wine bottle ready for aging produced by the wine maker is lower than the profit from the same wine bottle investment. Usually, the wine producer is handling in the range of 50–100% value added, the liquid investment can bring hundreds, sometimes thousands of percentage in the revenue. These values are mostly reaching only French wines. It is important to say that some investors purchase the wine bottles not only for direct consume, but for their collections. See the Smith's Paradox of Value to remind the apparent contradiction (Holman, 2001). The common and usual profitability of wine bottle at the sale oscillates in the range 10%–15% p.a. However, there are some cases with 30% p.a. (www.investujeme.cz). Mr. Micka is comparing the wine investment to other alternative titles as a big advantage. According to the

Decanter professional magazine, the annual gross profitability of Bordeaux index during 1978–2000 reached 12% (without including an inflation).

Due to higher competition of wine producers and the increasing supply of wine the rise is slowing down. Most of this process was caused by the global economy crisis in 2009. The wine compared to other titles did not go through such fluctuation. Also these type of investors act differently from other regular stock investors. It is very important to say that compared to other articles the wine is characterized by the long-term liquidity. „The value is rising slowly but in the long period of time. It is not the speculation“ (www.investujeme.cz).

Such investment is but connected to the additional costs which are decreasing the profitability. Primarily, there are quite high storing costs. Considering that an average period of maturing is between 5–15 years, it is very important to consider the storing possibilities. Either in the form of private boxes rent at the external company or purchasing own capacities (especially in the larger volumes of bottles). The price of the storing boxes depends on the size of the box and usually costs in the range of 600 upto 2000 CZK/year. Znovín Znojmo offers for example (see Tab. II).

II: Annual Rent of standard archive private box for 2011

| Private archive box with capacity of (pcs. of bottles) | Annual rent in CZK |
|--------------------------------------------------------|--------------------|
| 0–100 | 600 |
| 101–150 | 1 300 |
| 151–200 | 1 500 |
| 201–max. capacity | 2 000 |

Source: Znovín Znojmo a. s.

Based on the previous facts, it is evident that the storage and the agency costs (if required) will play together with the purchase expenses fundamental role of the profitability. Also it is necessary to make regular degustations in the range of 4–6 months in order to predict the bottle maturity. All the above probably with an expert. There are already some wineries who publish the status of aging on their web pages. The „cost of tasting“ could be reduced by invitation of public and imposing the charge on the degustation. At this moment we leave the additional expenditures out of account. These costs which directly do not interfere the process are called „sunk costs“ and are usually not calculated to the investment (Synek, 1999). Such costs can have the form of travelling of the owner, psychological dissatisfaction of go awry investment, additional rent of external sources (accounting and taxes services), etc.

Another important role will play the cost of financial sources for the planned investment. The interest rate for such type of business is oscillating near 6% p. a. in the Czech banks. This is a crucial fact, especially during the situation in which each

investor compares the opportunity costs. Such cost can be defined as an expenditure/value which is given up into any activity measured in terms of the value of the best alternative that is not chosen (foregone) (Synek, 1999). In our case the opportunity cost of wine investment will be compared to other alternative commodities, stocks or titles. Another costs will be spent on the marketing activities connected the finding of the purchaser (customer). Further unknown variable can play the inflation rate, which must be calculated, especially in the time period of 15–20 years of aging. Based on the investment length and actual global economical problems there is very difficult to predict the percentage rate of inflation in such long term.

The liquidity of the wine investment

One of the most important factors associated with wine investment is the price policy and its conversion to liquid assets, moreover each bottle of wine has its own and specific moment of maturity which leads into the sale. Such a moment varies by each kind of wine. The very first wines getting matured can be especially seen by dry white wines followed by semi-dry wines and sweet wines in the end. Acid wines with high level of natural extract also makes the overall maturing process longer. We could say, longest period of maturing is given by red wines, mainly with high percentage of alcohol included (Ambrosi, Swoboda, 2001). Wine producers should avoid to archive low or average quality wines as they have poor or even no potential to raise its value over time. However, proper storage is considered as necessary condition affecting each investment success. It is also important to set up a supply chain and sales strategy to cover the time before wine gets matured. As there is no organised wine market with sufficient liquidity in the Czech Republic, it is not an easy task as it seems to be at a glance. On the other hand, there is an increasing amount of consumers, restaurant owners and entrepreneurs looking for specific and unique wines they prefer to buy (www.investujeme.cz). If we correctly estimate the wine maturity which is oscillating between 15 to 20 years for instance, we can start and keep selling it over the next five years after reaching of 15th year of age. Wines are usually ready for immediate consumption right after they have been delivered to the restaurants or any catering facility. The indisputable and real advantage for an investor is a fact to easily have an eye or hand contact with each bottle of wine, which is apparently not the case of any „e-record investment“ widely used by stockholders today. Current situation at the market says, rather than speculators, mainly wine enthusiasts, lovers or experts embark on wine investments as they are able to appraise and perceive the real value of the wine as a commodity which satisfies their needs instead of undertaking the investment for its given purpose.

The price of the wine investment

The price of wine must go through several phases in proportion to the aging and maturity of the bottle. Another very significant factor of price is the total volume of the existing/remaining bottles. This is corresponding to the decrease of the bottles. In such case the rule of indirect proportion is valid. The less bottles is offered at the market the more is the price going up. Usually, such case occurs if the amount of bottles goes under boundary of 10.000 pieces or less. This is called „boundary of availability“ (www.investujeme.cz). Such volume of investment is usually used by financially strong and erudite investors who can likewise influence the price while purchasing the total quantity of the great vintage and creating „man-made lack“. This is part of the „game“ of the investors while giving false or incomplete information. The closing effect of the investment will be influenced the type of the last client (wine store, food type of facility such as restaurant or direct consumer). Minimum level of the required value added will affect the negotiations as well. The common restaurant's added value goes upto 200%.

The key role always plays the final client/customer at the end based on the demand and his willing to accept certain price. The research (kolektiv autorů, 2006) showed that the accepted price of wine for the 51.4% of respondents is in the range of 51 to 100 CZK. 14.1% of respondents accepts the price 101–150 CZK and 9.4% prefer 151–200 CZK. 15.6% of wine store customers accepts the price 201–250 CZK. However, there are some respondents who would purchase the bottle for more than 300 CZK. The most important fact is that 86.4% of all respondents prefer Czech or Moravian wines to foreign.

CONCLUSION

Based on the above written facts there is relatively low purchase power of the Czech population. In connection with big competition and supply of the foreign high quality wines the wine investment into local wines seems to be no profitable. We might expect that with the increasing wealth of Czech population the per capita wine consumption will turn the trend together with the volume of the bottled wine investment in a positive direction.

SUMMARY

The objective of this thesis was to describe the situation of the wine investment commodity process. There were defined fundamental steps of investment commencing with recommendation how and when to invest. This article is also giving solution how to minimize costs relating to selection, storing, administration, aging of bottled wine as well as to determine the correct time period for sale. The list of risks connected to this type of investment has appeared together with the implication of Information asymmetry theorem.

This thesis solved the matter of liquidity and the correct price making process during wine investment. It can be summarized that the typical Czech consumer does not have a sufficient financial ability at disposal as the foreign consumers do. This key factor plays the major negative role, which convicts any wine investment into local wines in Czech Republic to failure. The situation can differ in mid-term or long-term and can obtain positive direction.

Acknowledgement

This article was processed in the framework of Research intension MSM 6215648904 Czech economy in the process of integration and globalization and the development of the agrarian sector and public services under new conditions of the integrated agrarian market as a part of the solution of Thematical trend 04 Development of the agrarian business, forming of the segmented markets in the frame of commodity chains and food retails in the process of the integration and globalization and the change of the agrarian policy.

REFERENCES

- AMBROSI, H., SWOBODA, I., 2001: *Jak správně vychutnat víno*, 1. vydání. Praha: Euromedia group. 104 s. ISBN 80-242-0642-0.
- BEČVÁŘOVÁ, V. a kol., 2008: *Vývoj českého zemědělství v evropském kontextu*, MZLU, Brno, 62 s. ISBN 978-80-7375-255-2.
- BEČVÁŘOVÁ, V., VINOHRADSKÝ, K., ZDRÁHAL, I., 2009: Czech agriculture and development of price environment in the EU common market. Folia univ. agric. Et silvic. Mendel. Brun., Vol. II., No. 12.
- HOLMAN, R. a kol., 2001: *Dějiny ekonomického myšlení*, 2. vydání. Praha: C. H. Beck, 541 s. ISBN 80-7179-631-X.
- CHLÁDKOVÁ, H., 2006: *Rozhodování spotřebitelů při nákupu vína*. In: INTERNATIONAL SCIENTIFIC DAYS 2006, Faculty of Economic and Management SAU in Nitra, "Competitiveness in the EU – Challenge for the V4 countries" Nitra, May 17–18, 2006.

- KOLEKTIV AUTORŮ, 2006: *Perspektivy vývoje a návrhy opatření politiky vinohradnictví a vinařství a rozvoje venkova v Jihomoravském regionu*, MZLU, Brno a Velké Bílovice, 67 s.
- LINTNER, T., 2003: *Zhodnocení efektivnosti investic do technologie pro řízené kvašení vína*. MZLU, Brno, 87 s.
- SYNEK, M. a kol., 1999: *Podniková ekonomika*, 1. vydání. Praha: C. H. Beck, 456 s. ISBN 80-7179-228-4.
- SOUKUPOVÁ, J. a kol., 1996: *Mikroekonomie*, 1. vydání. Praha: Management Press, 536 s. ISBN 80-85943-17-4.
- ŽÁK, M. a kol., 2002: *Velká ekonomická encyklopedie*, 2. vydání. Praha: Linde, 887 s. ISBN 80-7201-381-5.
- <http://aktualne.centrum.cz/ekonomika/nakupy/clanek.phtml?id=666792>
- <http://www.denik.cz/ekonomika/investice-do-vina-jsou-zadanou-komoditou20110213.html>
- <http://eregal.ihned.cz/c1-46977650-co-ovlivnuje-nakup-vina>
- <http://www.dobravinoteka.cz/magazin-o-vine/novinky?detail=285>
- <http://www.gwl.cz/poradenstvi-v-oblasti-investic-do-vina>
- <http://www.investujeme.cz/aktualne-cz/vino-je-bezpecna-investice.-prodate-draz-nez-nakoupite/>
- <http://www.investujeme.cz/clanky/nvestice-do-vina-aneb-tekuta-investicni-prilezitost/>
- <http://www.investujeme.cz/clanky/vino-jako-investice-nizka-likvidita-zajimavy-vynos/>
- http://www.liv-ex.com/pages/static_page.jsp?pageId=100
- <http://www.omid.cz/cs/about-us/research/snapshots/2011/6/10/podle-jakych-kriterii-si-vybirame-vina.html>
- <http://www.penize.cz/44747-russell-3000-index>
- http://www.russell.com/indexes/data/fact_sheets/us/russell_3000_index.asp
- <http://www.terroir-france.com/theclub/meaning.htm>
- <http://www.znovin.cz/terroir>

Address

Ing. Tomáš Lintner, Ugartova 327/6, 669 04 Znojmo–Přímětice, Česká republika, e-mail: tomlintner@email.cz

