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PARETO EFFICIENT INCOME TAX SCHEDULES AND NUMERICAL SOLUTIONS TO MIRRLEES' OPTIMAL INCOME TAX MODEL: A CRITICAL SURVEY

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Abstract
This paper aim is to study the Pareto efficient income taxation schedules in Mirrlees' optimal tax model. These Pareto efficient income tax schedules reveal the famous zero-at- the- top results. Namely that marginal tax rates should be low where probability density function of the distribution of income falls rapidly. Propositions for optimal Pareto income taxation are: There should be no distortionary taxation on the individual with the highest ability while the labor supply of the less able is distorted, there should be no commodity taxation on either high or low ability individuals if leisure and consumption are separable. Atkinson-Stiglitz theorem provides different result than Ramsey (1927) about the commodity taxation but also about optimal taxes on labor income change when in presence of commodity taxes.

Keywords: *Pareto efficient taxation, Mirrlees tax model, Optimal taxation*
JEL: H21

Introduction
Economist ever since 19th century were making first attempts to show that progressive taxation can be justified on more fundamental principles, see Stiglitz (1987). Edgeworth (1868) and Edgeworth (1897) tried to show that utilitarianism implied progressivity[1].New welfare economics from 1930's onwards limited economists in their role in identifying Pareto efficient allocations, and in finding Pareto inefficiencies and show they could be eliminated. But later in 1970's re-examined the tax structures by making use of the utilitarian social welfare functions, but also broadening their analysis to investigate the consequences of a wider class of social welfare functions (Rawlsian and with Pareto weights). The major advances on earlier work done by Edgeworth came from Mirrlees (1971). This work recognized the importance of incentives associated with taxation, namely: the presence of trade-offs between equity and efficiency considerations, that have been long recognized and there had been some formal modeling, see Fair (1971).Mirrlees calculations had provided support for the advocates of progressivity. Or as Mirrlees said :"I must confess that I had expected the rigorous analysis of income-taxation in the utilitarian manner to provide an argument for high tax rates," Professor Mirrlees wrote. "It has not done so." .The points made by Mirrlees include: Linear tax schedule is desirable, except supply of highly educated labor is much more inelastic from the utility function, and especially negative income tax is recommended for the workers that earn lower than some level, Income taxation is of no use when battling inequality, Some complementary taxes for the income tax will be of use here…such as taxes that depend on the time spent at

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[1] Since all individuals have same utility of income function, and they exhibited diminishing marginal utility, and because social welfare is the sum of all individual utilities, it immediately followed that a decrease in utility from taking a dollar away from a rich person was less than the decrease in social welfare from taking away dollar from poor person.

work and workers ability and the income from such labor. The problem lies here as Mirrlees wrote:" but if it is true, as our results suggest, that the income tax is not a very satisfactory alternative, this objection must be weighed against the great desirability of finding some effective method of offsetting the unmerited favors that some of us receive from our genes and family advantages". Mirrlees (1971) , in the basic version of the model allowed individuals to differ in their innate ability. The planer can observe income, but the planner cannot observe ability or effort. By recognizing unobserved heterogeneity, diminishing marginal utility of consumption, and incentive effects, the Mirrlees approach formalizes the classical tradeoff between efficiency and equity. In this framework the optimal tax problem is a problem of imperfect information between taxpayers and the social planner.So, the Pareto efficient income tax structures *i.e* the tax structures "which get the economy to the utilities possibilities schedule, given the limitations of government's information and other limitations of government's ability to impose taxes. The use of different social welfare functions can provide systematic way of thinking of the trade offs between efficiency and redistribution[2]. When individuals' income generating abilities are constant over time, Pareto efficient income taxation is the same as in static two-type (high and low ability) Mirrlees model. Efficient tax systems are stationary, low ability individuals face a positive marginal tax rate and high ability individuals face zero marginal tax rate, so their labor supply is undistorted. However, when ability types are not correlated over time efficient tax systems are non-stationary and the individuals whose labor supply is distorted are those who have been low ability, see Battaglini,Coate (2003).This paper also follows the Mirrlees (1971) mechanism design approach and models of information asymmetries that preclude non-distortionary taxation, see also Albanesi, Sleet (2003), Brito et al (1991), Diamond and Mirrlees (1978), Golosov, Kocherlakota and Tsyvinsky (2003), Golosov and Tsyvinski (2003) and Werning (2002). Mirrlees (1986), elaborates that a good way of governing is to agree upon objectives, then to discover what is possible and to optimize. The central element of the theory of optimal taxation is information. Public policies apply to the individuals on the basis of what the government knows about them. Second welfare theorem[3] states, that where a number of convexity and continuity assumptions are satisfied, an optimum is a competitive equilibrium once initial endowments have been suitably distributed. In general, complete information about the consumers for the transfers is required to make the distribution requires, so the question of feasible lump-sum transfers arises here. Saez (2001) argued that "unbounded distributions are of much more interest than bounded distributions to address high income optimal tax rate problem". In all of the cases that Saez (2001) investigated (four cases)[4] the optimal tax rates are clearly U-shaped. This paper by using the elasticity estimates from the literature, the formula for the asymptotic top rates suggests that the marginal rates for the labor income should not be lower than 50% and they could be as much as high as 80%. Usually the optimal tax systems combine flat marginal tax rate plus lump sum grants to all the individuals (so that the average tax rate rises with income even if the marginal does not), Mankiw NG, Weinzierl M, Yagan D.(2009). This paper is organized as follows: First it derives Pareto optimal income tax rates, second it reviews paper by Werning (2008), third it reviews results from Pareto efficient taxation by Stiglitz (2018),fourth it derives one version of Mirrlees 1971 model, and numerical solutions to Mirrlees original model are provided.

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[2] "Most optimal tax models dealing with income redistribution assume that the government wants to redistribute from the well-off to the not so well-off, e.g., since low-income individuals are assumed to have higher marginal utility of consumption than high-income ones. We then often say that the government or the social planner is inequality averse "(see, Aronsson,T. Johansson-Stenman,O.(2015)).
[3] Second fundamental theorem is giving conditions under which a Pareto optimal allocation can be supported as a price equilibrium with lump-sum transfers, i.e. Pareto optimal allocation as a market equilibrium can be achieved by using appropriate scheme of wealth distribution (wealth transfers) scheme (Mas-Colell, Whinston et al. 1995)
[4] Utilitarian criterion, utility type I and II and Rawlsian criterion, utility type I and II.

Pareto-optimal income taxation

Here we are going to assess the Pareto efficiency of a tax schedule. Here first assumption is that elasticity of labor supply is zero. Now, let ε_w^* represents the compensated elasticity of labor supply with respect to real wage. Let the distribution of income generated by the current tax system be Pareto:

equation 1

$$h(w) = k(w)^{-k-1}\underline{w}^k \ for \ w \geq \underline{w} \ and \ k > 0$$

and now let's suppose that there is linear flat tax :

equation 2

$$t(w) = t + \tau(w)$$

Where τ represents marginal tax rate and intercept t. Here we assume that ε_w^* does not vary across individuals. This will be true in the case of this utility function[5]:

equation 3

$$u(c, w, \theta) = c - w\theta^\alpha$$

Now, starting from a general test for Pareto efficiency we will derive inequality for τ, ε_w^*, k. The starting point here is this inequality which states that marginal tax rate must be lower than 100% :

inequality 1

$$\frac{\tau(\theta)}{1-\tau(\theta)} \frac{\varepsilon_w^*}{\Phi} \left(-\frac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} - 1 - \frac{dlog(\varepsilon_w^*(w))}{dlogw} - \frac{dlog(h^*(w)}{dlogw} - \frac{\partial MRS}{\partial c}w \right) \leq 1$$

The assumptions to use this inequality are as follows:

1. By quasi-linear utility preferences we have : $-\frac{\partial MRS}{\partial c} = 0$
2. A flat tax implies no convexity $t'' = 0$, a constant marginal tax rate $MTR = \tau(\theta) = \tau$ and also $\frac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} = 0$
3. Now, the logarithm of Pareto income density is given as:

equation 4

$$\log(h \cdot (w)) = \log k - (k+1)\log w + k \log \underline{w}$$

First of this log density with respect to income gives:

equation 5

$$\frac{d\log(h^*(w))}{d\log w} = \frac{d(\log k - (k+1)\log w + k\log \underline{w})}{d\log w} = \frac{-(k+1)d\log w}{d\log w} = -(k+1)$$

So the first inequality in this part $\frac{\tau(\theta)}{1-\tau(\theta)} \frac{\varepsilon_w^*}{\Phi} \left(-\frac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} - 1 - \frac{dlog(\varepsilon_w^*(w))}{dlogw} - \frac{dlog(h^*(w)}{dlogw} - \frac{\partial MRS}{\partial c}w \right) \leq 1$ would become:

---

[5] θ represents every individual's characteristics

equation 6

$$\frac{\tau(\theta)}{1-\tau(\theta)}\varepsilon_w^* k \le 1$$

The parameter k has been estimated by Saez (2001) to be of value 1.6[6]. The thicker the tail of the distribution, the smaller is a. Pareto distribution is given as PDF lower CDF and upper CDF [7].PDF (probability density function) :

equation 7

$$f(x, x_m, \alpha) = \frac{\alpha x_m^\alpha}{x^{\alpha+1}}$$

Lower cumulative distribution function (lower CDF):

equation 8

$$P(x, x_m, \alpha) = \int_{x_m}^{x} f(x, x_m, \alpha)dx = 1 - \left(\frac{x^m}{x}\right)^\alpha$$

Upper cumulative distribution function (upper CDF):

equation 9

$$Q(x, x_m, \alpha) = \int_{x}^{\infty} (x, x_m, \alpha)dx = \left(\frac{x_m}{x}\right)^\alpha$$

Figure 1 Pareto distribution function with shape parameter $\alpha \in (1.5, 2, 2.5)$
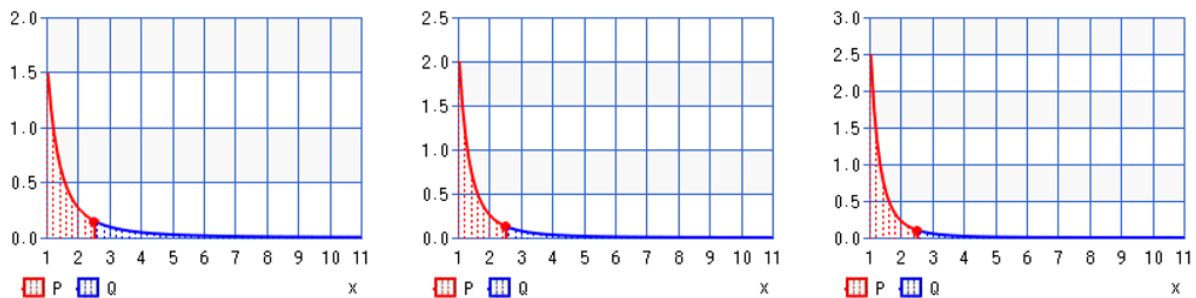
Source: Author's calculation

Table 1 Pareto distribution values

	$\alpha = 1.5$	$\alpha = 2$	$\alpha = 2.5$
Percentile x			
Scale parameter x_m		2.5	
		1	
Shape parameter α	1.5	2	2.5

Source: Author's calculation

Table 2 Pareto distribution probability density, lower CDF ,upper CDF

	$\alpha = 1.5$	$\alpha = 2$	$\alpha = 2.5$
pareto distribution		value	
probability density f	0.15	0.128	0.10
lower cumulative P	0.75	0.84	0.89
upper cumulative Q	0.26	0.16	0.10

Source: Author's calculation

---

[6] This value is approx..for US incomes above 0.3 m.

[7] This part is for readers that are not familiar with basic statistics

Note that the Pareto distribution has unbounded variance for $a < 2$ and that several studies suggest that this parameter might be about 2 times higher in several European countries.

4. The compensated elasticity of labor supply with respect to real wage ε_w^* has been estimate approximately to be 0.5 see Gruber, Saez (2002).

5. So that $\frac{1}{\varepsilon_w^*} \in \left[\frac{1}{6}; \frac{10}{3}\right]$ or $\frac{1}{2*3} = \frac{1}{6}$ and $\frac{1}{0.2*1.5} = \frac{10}{3}$ which lies around a central value of $\frac{1}{0.5 \cdot 2.5} = 0.8$

And the second inequality from above now would become:

inequality 2

$$\frac{\tau(\theta)}{1 - \tau(\theta)} \le 0.8$$

Gruber, Saez (2002) estimate that for the US taxpayer with incomes above 100K\$ have elasticity around 0.57. And those <100K\$ have elasticity around 0.2 or even less. Then the inequality will be affected in two ways:

1. $\varepsilon_w^*(\theta)$ will be higher for higher incomes
2. $\frac{dlog(\varepsilon_w^*(w))}{dlogw} > 0$

The inequality then becomes:

Relative to the average-income constant elasticity benchmark case the upper bound on the marginal tax ratio $\dfrac{1}{\varepsilon_w^*\left(k - \frac{dlog(\varepsilon_w^*(w))}{dlogw}\right)}$ is affected as follows for high and low earners:

> ➤ For high earners :
>   1. is directly negative affected by the factor $\frac{1}{\varepsilon_w^*}$
>   2. is positively affected by the factor $\frac{dlog(\varepsilon_w^*(w))}{dlogw}$
> ➤ for low earners:
>   1. is directly positively affected by the factor $\frac{1}{\varepsilon_w^*}$
>   2. is positively affected by the factor $\frac{dlog(\varepsilon_w^*(w))}{dlogw}$

Thus, in order to pass the efficiency test:

✓ a higher maximal marginal tax rate for low-income earners is acceptable.
✓ the effect on the maximal tax rate for high-income earners is theoretically ambiguous even if I suspect the direct negative effect to dominate because locally the logarithm of elasticity is relative stable compared to the parameter k and hence a lower maximal marginal tax rate for high- income earners is acceptable. This is very intuitive: if low-income earners are less elastic, we can tax them relative more.

Now, let's see how progressivity would affects tax schedule in question here. Convexity implies that $\tau'' > 0$. To keep things simple, we continue to assume that there is:

• quasi-linearity of preferences: $-\frac{\partial MRS}{\partial c} w = 0$
• a constant compensated elasticity of labor supply with respect to the real wage: $\frac{dlog(\varepsilon_w^*(w))}{dlogw} = 0.$ Then the inequality becomes:

inequality 3

$$\frac{\tau(\theta)}{1-\tau(\theta)} \frac{\varepsilon_w^*}{\Phi} \left(-\frac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} - 1 - \frac{dlog(h^*(w))}{dlogw} \right) \le 1$$

Given the convexity we also have because $\tau'(w) < 1$:

inequality 4

$$\Phi(w) = 1 + we_w^*(w)\frac{\tau''(w)}{1-\tau'(w)} > 1$$

Now we have that:
equation 10

$$\frac{dlog(h^*(w)}{dlogw} = \frac{dlog(h^*(w)\Phi(w)^{-1}}{dlogw}$$

We know from previously that $\Phi(w)$ increases in w or equivalently that $\Phi(w)^{-1}$ decreases in w and thus that the absolute value of the slope of the virtual density is higher than the real density $-\frac{dlog(h^*(w)}{dlogw} > -\frac{dlog(h(w)}{dlogw}$. Compared to the fat tax rate, the upper bound on the marginal tax ratio:
equation 11

$$\tau'(\theta) = \cfrac{1}{\cfrac{\varepsilon_w^*}{\Phi}\left(-\cfrac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} - 1 - \cfrac{dlog(h^*(w))}{dlogw} \right)}$$

And it is affected in three ways:
- ➢ positively by Φ
- ➢ positively by $-\frac{dlog\frac{\tau(\theta)}{1-\tau(\theta)}}{dlogw} < 0$
- ➢ negatively by the distinction between the virtual and the real density

We expect the positive effect to dominate and thus the upper bound on the marginal tax could then be higher. Werning (2008) proposed Pareto efficient income taxation with dual optimization problem in the original Mirrlees (1971) framework. Namely this model starts from the Mirrleesian framework with additively separable preferences like this:

equation 12

$$u(c, y, \theta) = u(c) - \theta h(y)$$

Where θ denotes heterogenous disutility from producing output y. Cardinality of preferences[8] is irrelevant and only ordinal preferences matter[9]. The expenditure function $e(v, y, \theta)$ is inverse from $u(\cdot, y, \theta)$, and $F(\theta)$ represents the distribution of θ in the population, and its PDF can be represented as $f(\theta)$. Some tax function is $t(y)$ and workers' utility $v(\theta)$ is maximized:
equation 13

$$v(\theta) \equiv \max_y u(y - t(y), y, \theta)$$

---

[8] In economics, a cardinal utility function or scale is a utility index that preserves preference orderings uniquely up to positive affine transformations, see Ellsberg (1954)
[9] In economics, an ordinal utility function is a function representing the preferences of an agent on an ordinal scale. Ordinal utility theory claims that it is only meaningful to ask which option is better than the other, but it is meaningless to ask how much better it is or how good

$c(\theta) = e(v(\theta), y(\theta), \theta)$ is a consumption function dependent on workers' characteristics, $y(t) = y - t(y)$ and an allocation is resource feasible if :

inequality 5

$$\int \big(y(\theta) - c(\theta) \big) dF(\theta) + e \geq 0$$

Here e is an endowment. The allocation generated by some tax schedule is (constrained) Pareto efficient if there is no other tax schedule that induces a resource feasible allocation where nobody is worse off, and some workers are strictly better off. The marginal tax rate is :

equation 14

$$\tau(\theta) = t'\big(y(\theta)\big) = 1 + \frac{u_y(c(\theta), y(\theta), \theta)}{u_c(c(\theta), y(\theta), \theta)} = 1 - \frac{\theta h'\big(y(\theta)\big)}{u'^{(c(\theta))}} = 1 - e_y(v(\theta), y(\theta), \theta)$$

There is above mentioned dual problem for the social planer. Here is introduced Pareto planning problem and sufficient and necessary conditions for optimality of the solution to the planers' problem[10].

equation 15

$$\max_{\tilde{y},\tilde{v}} \int (\tilde{y}(\theta), -e(\tilde{v}(\theta), \theta) dF(\theta) \text{ s.t. } \tilde{v}(\theta) = \tilde{v}(\tilde{\theta}) - \int_{\theta}^{\bar{\theta}} u_\theta(e(\tilde{v}(z), \tilde{y}(z), z) \tilde{y}(z), z) dz$$

In previous $\tilde{y}(\theta)$ is non-increasing $\tilde{v}(\tilde{\theta}) \geq v(\theta)$. The objective is to maximize aggregate net resources, output minus consumption. FOC necessary to be verified in order allocation to be Pareto efficient. Lagrangian for the FOC's is:

equation 16

$$\mathcal{L} = \int (\tilde{y}(\theta), -e(\tilde{v}(\theta), \theta) dF(\theta) + \int \left(\tilde{v}(\theta) - \tilde{v}(\bar{\theta}) + \int_{\theta}^{\bar{\theta}} u_\theta(e(\tilde{v}(z), \tilde{y}(z), z) \tilde{y}(z), z) dz \right) d\mu(\theta)$$

Integrating second term by parts we have:

equation 17

$$\mathcal{L} = \int (\tilde{y}(\theta), -e(\tilde{v}(\theta), \theta) dF(\theta) - \tilde{v}(\bar{\theta})\mu(\bar{\theta}) + \mu(\underline{\theta})\tilde{v}(\underline{\theta})$$
$$+ \int \tilde{v}(\theta) d\mu + \int \mu(\theta) u_\theta (\tilde{v}(\theta), \tilde{y}(\theta), \theta) d\theta$$

About the efficiency conditions, the FOC for $\tilde{y}(\theta)$ evaluated at $\big(y(\theta), v(\theta)\big)$ gives:

equation 18

$$(1 - e_y(v(\theta), y(\theta), \theta) f(\theta) = -\mu(U_{\theta_c}(e(v(\theta), y(\theta), \theta) e_v(v(\theta), y(\theta), \theta) + u_{\theta_y}\big(e(v(\theta), y(\theta), \theta)\big)$$

Implying

$$\mu(\theta) = \tau(\theta) \frac{f(\theta)}{h'\big(y(\theta)\big)}$$

The FOC for $v(\bar{\theta})$ is $\mu(\bar{\theta}) \geq 0$, or if θ is bounded away from zero the FOC for $v(\underline{\theta})$ gives $\mu(\bar{\theta}) \leq 0$. And so : $\tau(\bar{\theta}) \geq 0$ and $\bar{\tau}(\underline{\theta}) \leq 0$. For interior θ, the FOC with respect to $\tilde{v}(\theta)$ evaluated at $\big(y(\theta), v(\theta)\big)$ gives:

---

[10] A Pareto improvement would always be possible: if another allocation provided the same utility but increased net resources, then these resources can be used to construct another allocation that increases utility for some workers and is resource feasible.

equation 19

$$\dot{\mu}(\theta) = \leq e_v(v(\theta), y(\theta), \theta) f(\theta)$$

By differentiation equation gives:
equation 20

$$\dot{\mu}(\theta) = \mu(\theta) \left(\frac{\tau'(\theta)}{\tau(\theta)} + \frac{f'(\theta)}{f(\theta)} - \frac{h''(y(\theta))}{h'(y(\theta))} y'(\theta) \right)$$

Substituting $\mu(\theta) = \tau(\theta) \frac{f(\theta)}{h'(y(\theta))}$ and $\dot{\mu}(\theta) = \mu(\theta) \left(\frac{\tau'(\theta)}{\tau(\theta)} + \frac{f'(\theta)}{f(\theta)} - \frac{h''(y(\theta))}{h'(y(\theta))} y'(\theta) \right)$ into the $\dot{\mu}(\theta) = \leq e_v(v(\theta), y(\theta), \theta) f(\theta)$ we get :

inequality 6

$$\tau(\theta) \left(\frac{d \log \tau(\theta)}{d \log(\theta)} + \frac{d \log f(\theta)}{d \log \theta} - \frac{d \log h'(y(\theta))}{d \log \theta} \right) \leq 1 - \tau(\theta)$$

The integral form of this efficiency condition is given as:
equation 21

$$\frac{\tau'(\theta) f(\theta)}{h' y(\theta)} + \int_\theta^{\bar{\theta}} \frac{1}{u'\left(c(\tilde{\theta})\right)} f(\tilde{\theta}) d\tilde{\theta} \leq 0$$

Proposition 1 : Given the utility function $u(c, y, \theta)$ and a density of skills $f(\theta)$, a differentiable tax function $t(y)$ inducing an allocation .$(c(\theta), y(\theta))$ is *Pareto efficient* if and only if condition$\frac{\tau'(\theta) f(\theta)}{h' y(\theta)} + \int_\theta^{\bar{\theta}} \frac{1}{u'(c(\tilde{\theta}))} f(\tilde{\theta}) d\tilde{\theta} \leq 0$ holds, where $\tau(\theta) = t'(y(\theta))$.

Proof: Now, we define $\tilde{h}(\theta) = h(\tilde{y}(\theta))$ and we will write the planning problem as:
equation 22

$$\max_{\underline{\tilde{v}, \tilde{h}}} \int \left(h^{-1}\left(\tilde{h}(\theta)\right) - u^{-1}\left(\underline{\tilde{v}} - \int_{\underline{\theta}}^\theta \tilde{h}(z) dz + \theta \tilde{h}(\theta) \right) \right) dF(\theta)$$

Subject to :

inequality 7

$$\underline{\tilde{v}} - \int_{\underline{\theta}}^\theta \tilde{h}(z) dz - v(\theta) \geq 0$$

And $\tilde{h}(\theta) \in ni(\Theta)$, where $ni(\Theta)$ is the set of non-increasing real-valued functions over Θ .This is a convex optimization problem the objective to be maximized is concave and the constraints are linear (convex). Now, $ni(\Theta)$ is a closed convex cone, closed under multiplication by positive scalars in the linear space of bounded functions $\mathcal{B}(\Theta)$ endowed with the supremum norm. Previous constraint $\underline{\tilde{v}} - \int_{\underline{\theta}}^\theta \tilde{h}(z) dz - v(\theta) \geq 0$ can be expressed as: $G(\tilde{h}) \in P$, where the mapping $G: ni(\Theta) \to c(\Theta)$ is convex, and P is the positive cone of the $c(\Theta)$.Previous constraint $\underline{\tilde{v}} - \int_{\underline{\theta}}^\theta \tilde{h}(z) dz - v(\theta) \geq 0$ allows for an interior point $\forall \underline{\tilde{v}} > v(\underline{\theta}); \tilde{h}(\theta) = h(\theta) = h(\tilde{y}(\theta))$. All the conditions required in Luenberger (1969) are met and maximizing Lagrangian is sufficient and necessary for optimality. The Lagrangian here is:

equation 23

$$\mathcal{L} = \int \left(h^{-1}(\tilde{h}(\theta) - u^{-1}\left(\underline{v} - \int_{\underline{\theta}}^{\theta} h(z)dz + \theta\tilde{h}(\theta) \right) \right) dF(\theta) + \int \left(\underline{v} - \int_{\underline{\theta}}^{\theta} \tilde{h}(z)dz - v(\theta) \right) d\lambda(\theta)$$

For some nondecreasing function $\lambda(\theta)$, the multiplier on the inequality $\tilde{\underline{v}} - \int_{\underline{\theta}}^{\theta} \tilde{h}(z)dz - v(\theta) \geq 0$, is normalized so that $\lambda(\bar{\theta}) = 0$. Fréchet derivative[11] is given by the following:

equation 24

$$\partial\mathcal{L}\left(h; \Delta_{\underline{v}}; \Delta_{\tilde{h}}\right) = \int \left((h^{-1})'\left(h(\theta)\right)\Delta_{\tilde{h}}(\theta) - (u^{-1})'\left(u(\theta)\right)\left(\Delta_{\underline{v}}(\theta) + \theta\Delta_{\tilde{h}}(\theta)\right) \right) + \int \Delta_{\tilde{v}}(\theta)d\lambda(\theta)$$

Where in previous:

equation 25

$$\Delta_{\tilde{v}}(\theta) = \Delta_{\underline{v}} - \int_{\underline{\theta}}^{\theta} \Delta_{\tilde{h}}(z)dz$$

Where z is the function of earnings. Now by substituting for $\Delta_{\tilde{v}}(\theta)$ and by integration by parts we get:

equation 26

$$\partial\mathcal{L}\left(h; \Delta_{\underline{v}}; \Delta_{\tilde{h}}\right) = \int \left((h^{-1})'\left(h(\theta)\right) - (u^{-1})'(u(\theta)\theta)f(\theta)\Delta_{\tilde{h}}(\theta)d\theta \right)$$
$$+ \int \left(\int_{\underline{\theta}}^{\theta} (u^{-1})'(u(z))f(z)dz \right)\Delta_{\tilde{h}}(\theta)d\theta$$
$$+ \int \lambda(\theta)\Delta_{\tilde{h}}(\theta)d\theta - \Delta_{\underline{v}}\left(\lambda(\underline{\theta}) + \int (u^{-1})'(u(\theta)f(\theta)d\theta\right)$$

By collecting the terms we get :

equation 27

$$\partial\mathcal{L}\left(h; \Delta_{\underline{v}}; \Delta_{\tilde{h}}\right) = \int \mathcal{A}(\theta)\Delta_{\tilde{h}}(\theta)d\theta = \Delta_{\tilde{h}}(\underline{\theta})\int_{\underline{\theta}}^{\theta} A(z)dz + \int \int_{\underline{\theta}}^{\theta} A(z)dz\, d\Delta_{\tilde{h}}(\theta)$$

Where:

equation 28

$$\mathcal{A}(\theta) = \left(\left((h^{-1})'\left(h(\theta)\right) - (u^{-1})'(u(\theta)\theta)f(\theta) \right) \right) + \int_{\underline{\theta}}^{\theta} (u^{-1})'(u(z))f(\theta)dz + \lambda(\theta)$$

$\mathcal{L}\left(h; \Delta_{\underline{v}}; \Delta_{\tilde{h}}\right)$ is convex, and the necessary and sufficient conditions for $\tilde{h}(\theta) \in ni(\Theta)$ to be maximized are :

inequality 8

$$\partial\mathcal{L}\left(h; \Delta_{\underline{v}}; \Delta_{\tilde{h}}\right) \geq 0 \; ; \forall \Delta_{\tilde{h}} \in ni(\Theta); \partial\mathcal{L}\left(h; \underline{v}; h\right) = 0$$

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[11] It is commonly used to generalize the derivative of a real-valued function of a single real variable to the case of a vector-valued function of multiple real variables, and to define the functional derivative used widely in the calculus of variations.

Lemma 1. (optimality and FOC's to allow for Gateaux differentials[12] instead of Frechet derivatives Amador, Werning, and Angeletos (2006)) .Let f be a concave functional on P a convex cone in X.Take $x_0 \in P$ and define $h(x0) \equiv \{h : h = x - x0 \text{ and } x \in P\}$.Then, $\exists \delta f(x_0, h)$ for $h \in h(x_0)$. Assume that $\exists \delta f(x_0, \alpha_1 h_1 + \alpha_2 h_2)$ for $h_1, h_2 \in h(x_0)$, and $\delta f(x_0, \alpha_1 h_1 + \alpha_2 h_2) = \alpha_1 \delta f(x_0, h_1) + \alpha_2 \delta f(x_0, h_2)$ for $\alpha_1, \alpha_2 \in R$. A necessary condition for $x_0 \in P$ to maximize f is that: $\delta f(x_0, x) \leq 0 \ \forall \ x \in P$; $\delta f(x_0, x_0) = 0$. Thus, we obtain that a necessary and sufficient condition for the Lagrangian to be maximized at (u_0, w_0) over Φ and that is:

equation 29

$$\partial \mathcal{L}\left(\underline{w_0}; u_0; \underline{w_0}; u_0 \middle| \Lambda_0\right) = 0$$
$$\partial \mathcal{L}\left(\underline{w_0}; u_0; h_{\underline{w}}, h_u \middle| \Lambda_0\right) \leq 0 \; ; \forall (h_{\underline{w}}, h_u) \in \Phi$$

Since $\Delta_{\underline{v}} \lessgtr 0$ we obtain that:

equation 30

$$\lambda(\underline{\theta}) + \int (u^{-1})'(u(\theta)\theta) f(\theta) = 0$$

Because $\Delta_{\tilde{h}}(\theta) \lessgtr 0$ and $\Delta_{\tilde{h}} > 0$ it follows that we must have :

inequality 9

$\int_{\underline{\theta}}^{\theta} \mathcal{A}(z) dz = 0$; $\int_{\underline{\theta}}^{\theta} \mathcal{A}(z) dz \leq 0$

From $\partial \mathcal{L}(h; \underline{v}; h) = 0$, if the original $h(\theta) = h(y(\theta))$ strictly increasing near in neighborhood it follows that:

inequality 10

$$\int_{\underline{\theta}}^{\theta} \mathcal{A}(z) dz \leq 0 \Rightarrow \mathcal{A}(\theta) = 0$$

In addition we must have $\lambda(\theta)$, and by using the fact $h^{-1}\left(\tilde{h}(\theta) - (u^{-1})' \left(\underline{v} - u(\theta)\right) \theta = \tau(\theta)/h'\left(y(\theta)\right)$ and that $(u^{-1})'\left(u(\theta)\right) = e_v(v(\theta), y(\theta), \theta)$ we obtain that :

equation 31

$$-\lambda(\theta) = \frac{\tau(\theta) f(\theta)}{h'\left(y(\theta)\right)} + \int_{\theta}^{\bar{\theta}} e_v(v(z), y(z), z) f(z) dz$$

And previous expression is decreasing, by differentiation of this expressions and setting $-\lambda'(\theta) \leq 0$ gives $\tau(\theta) \left(\frac{d \log \tau(\theta)}{d \log(\theta)} + \frac{d \log f(\theta)}{d \log \theta} - \frac{d \log h'\left(y(\theta)\right)}{d \log \theta} \right) \leq 1 - \tau(\theta) \blacksquare$.

Now, if $F\left(\theta(y)\right) = 1 - G(y)$ which implies that $\frac{d \log \theta(y)}{d \log y} = -\varepsilon_{\theta,y}$ and $\theta'(y) < 0$. Where $\varepsilon_{\theta,y}$ is the elasticity of $\theta(y)$ with respect to y .

equation 32

$$\varepsilon_{\theta,y} \equiv \left| \frac{y \theta'(y)}{\theta(y)} \right| = -\frac{d \log\left(1 - t'(y)\right)}{d \log y} - \frac{d \log u'\left(y - t'(y)\right)}{d \log y} + \frac{d \log h'(y)}{d \log y}$$

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[12] Gateaux differential or Gateaux derivative is a generalization of the concept of directional derivative in differential calculus. Like the Fréchet derivative on a Banach space, the Gateaux differential is often used to formalize the functional derivative

And $f\big(\theta(y)\big) = -\dfrac{g(y)}{\theta'(y)}$

$$-\frac{d\log f\big(\theta(y)\big)}{d\log\theta}\,\varepsilon_{\theta,y} = \frac{d\log g(y)}{d\log y} - \frac{d\log -\theta'(y)}{d\log y} + 1 - \varepsilon_{\theta,y} - \frac{d\log\varepsilon_{\theta,y}}{d\log y}$$

And multiplying $\tau(\theta)\left(\dfrac{d\log\tau(\theta)}{d\log(\theta)} + \dfrac{d\log f(\theta)}{d\log\theta} - \dfrac{d\log h'(y(\theta))}{d\log\theta}\right) \leq 1 - \tau(\theta)$ by $\varepsilon_{\theta,y}$ and by substituting this last expression:

inequality 11
$$-\frac{d\log\big(1 - t'(y)\big)}{d\log y} - \frac{t'(y)}{\big(1 - t'(y)\big)}\left(\frac{d\log g(y)}{d\log y} - \frac{d\log h'\big(y(\theta)\big)}{d\log\theta} + 1 - \varepsilon_{\theta,y} - \frac{d\log\varepsilon_{\theta,y}}{d\log y}\right) \leq \varepsilon_{\theta,y}$$

By rearrangement this gives:

inequality 12
$$t'(y)\left(-\frac{d\log\big(1 - t'(y)\big)}{d\log y} + \frac{d\log h'\big(y(\theta)\big)}{d\log\theta} - \frac{d\log g(y)}{d\log y} - 1 + \frac{d\log\varepsilon_{\theta,y}}{d\log y}\right)$$
$$\leq -2\frac{d\log\big(1 - t'(y)\big)}{d\log y} + \frac{d\log h'\big(y(\theta)\big)}{d\log\theta} - \frac{d\log u'\big(y - t'(y)\big)}{d\log y}$$

Now one extension flat tax rate. We are assuming power utility function given as:
$u(c) = \dfrac{c^{1-\sigma}}{1-\sigma}$ and $h(y) = \alpha y^{\eta}$ and we are supposing top tax rate:

equation 33
$$\bar{\tau} \equiv \lim_{\theta\to 0}\tau(\theta) = \lim_{y\to\infty}t'(y) < 1$$

equation 34
$$\lim_{y\to\infty}\frac{d\log\big(1 - t'(y)\big)}{d\log y} = 0\; ; \; \frac{d\log\varepsilon_{\theta,y}}{d\log y} = 0$$

For high income consumption becomes proportional to income:
equation 35
$$\lim_{y\to\infty}\frac{d\log\big(1 - t'(y)\big)}{d\log y} = -\sigma \text{ and } \lim_{y\to\infty}\frac{d\log h'\big(y(\theta)\big)}{d\log\theta} = \eta - 1$$

Now by substituting these expressions in $t'(y)\left(-\dfrac{d\log\big(1 - t'(y)\big)}{d\log y} + \dfrac{d\log h'\big(y(\theta)\big)}{d\log\theta} - \dfrac{d\log g(y)}{d\log y} - 1 + \right.$

$\left. \dfrac{d\log\varepsilon_{\theta,y}}{d\log y}\right) \leq -2\dfrac{d\log\big(1 - t'(y)\big)}{d\log y} + \dfrac{d\log h'\big(y(\theta)\big)}{d\log\theta} - \dfrac{d\log u'\big(y - t'(y)\big)}{d\log y}$ gives:

inequality 13
$$\bar{\tau} \leq \frac{\sigma + \eta - 1}{\varphi + \eta - 2}$$

Where $\varphi = -\lim\limits_{y\to\infty}\dfrac{d\log g(y)}{d\log y}$, the value $\varphi - 1 > 0$ to ensure that income has finite mean, and it is called asymptotic Pareto distribution parameter. The Pareto distribution had a density that is a power function $g(y) = \mathcal{A}y^{-(\varphi)}$, so that these holds:

equation 36

$$\frac{d \log g(y)}{d \log y} = -\varphi$$

In $\bar{\tau} \leq \frac{\sigma + \eta - 1}{\varphi + \eta - 2}$ if $\varphi \approx 3$ as per Saez (2001) , then $\sigma < 2$ and σ cannot be interpreted as risk aversion but as control variable[13] for controlling the income and substitution effects for labor.Now in a case of flat tax $t(y) = \bar{\tau}(y)$ for a flat tax rate following result is yielded:

equation 37

$$\tau(y) = \frac{\sigma + \eta - 1}{-\dfrac{d \log g(y)}{d \log y} + + \eta - 2}$$

Now if we assume and transfers t_0 and that $t(y) = \bar{\tau}(y) - t_0$ where $t_0 > 0$ we get :

equation 38

$$-\frac{d \log u'\big(y - t(y)\big)}{d \log y} = -\sigma \frac{1 - t'(y)}{1 - \left(\frac{t(y)}{y}\right)} = \sigma \frac{1 - \bar{\tau}}{1 - \bar{\tau} + \frac{t_0}{y}} \leq \sigma$$

Which goes $-\frac{d \log u'(y - t(y))}{d \log y} \in (0, \sigma)$ for $y \in (0, \infty)$. So that $\frac{d \log \varepsilon_{\theta,y}}{d \log y} \geq 0$, aditionaly:

equation 39

$$\frac{dlog}{d \log y}\left(-\frac{d \log u'\big(y - t(y)\big)}{d \log y}\right) = \frac{dlog}{d \log y}\left(\frac{1 - \bar{\tau}}{1 - \bar{\tau} + \frac{t_0}{y}}\right) = \frac{\frac{t_0}{y}}{1 - \bar{\tau} + t_0/y} \leq 1$$

Which implies that :

inequality 14

$$\frac{d \log \varepsilon_{\theta,y}}{d \log y} \leq \frac{\sigma}{\sigma + \eta - 1}$$

And sufficient condition for $t'(y)\left(-\frac{d \log\big(1 - t'(y)\big)}{d \log y} + \frac{d \log h'(y(\theta))}{d \log \theta} - \frac{d \log g(y)}{d \log y} - 1 + \frac{d \log \varepsilon_{\theta,y}}{d \log y}\right) \leq$

$-2\frac{d \log\big(1 - t'(y)\big)}{d \log y} + \frac{d \log h'(y(\theta))}{d \log \theta} - \frac{d \log u'\big(y - t'(y)\big)}{d \log y}$ to hold is :

inequality 15

$$\bar{\tau} < \frac{\eta - 1}{-\dfrac{d \log g(y)}{d \log y} + \eta - 2 + \dfrac{\sigma}{\sigma + \eta - 1}} < \frac{\eta - 1}{-\dfrac{d \log g(y)}{d \log y} + \eta - 1}$$

Pareto efficient taxation and expenditures: pre- and re-distribution

Now another model that we turn our attention not to models nut conclusion that are presented in Stiglitz (2018). This paper extends to some extent the findings in the original Atkinson-Stiglitz theorem.Atkinson and Stiglitz (1976) demonstrated the following theorem known as Atkinson, Stiglitz theorem[14]:

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[13] A control variable (or scientific constant) in scientific experimentation is an experimental element which is constant and unchanged throughout the course of the investigation. Control variables could strongly influence experimental results, were they not held constant during the experiment in order to test the relative relationship of the dependent and independent variables. The control variables themselves are not of primary interest to the experimenter.

[14] Atkinson and Stiglitz(1972) had shown that in the absence of an income tax, optimal commodity taxes could be described by a simple Ramsey-like formula incorporating distributional effects, which suggested that when distributional concerns were given sufficient weight (for instance, in a society with a high level of both inequality and inequality aversion) goods like food with a low price elasticity of demand but a low income elasticity of demand

Theorem: Commodity taxes cannot increase social welfare if utility functions are weakly separable in consumption goods versus leisure and the subutility of consumption goods is the same across individuals, i.e., $u_i(c_1, \ldots, c_k, w) = u_i(v(c_1, \ldots, c_k), w)$ with the subutility function $v(c_1, \ldots, c_k)$ homogenous across individuals.

Laroque (2005) and Kaplow (2006) have provided intuitive prof of this theorem as follows:

Proof: A tax system $(\tau(\cdot), t)$ that includes both nonlinear income tax and a vector of commodity taxes can be replaces by a pure income tax $(\bar{\tau}(\cdot), t = 0)$ .This tax system keeps all individual utilities constant and raises at least as much tax revenue. Let $v(p + t, \gamma) = \max_{c} v(c_1, \ldots c_k)$ s.t. $(p + t) \cdot c \leq \gamma$ be the indirect utility of consumption goods which is common to al individuals. Now if we consider replacing $(\tau(\cdot), t)$ this tax system with $(\bar{\tau}(\cdot), t = 0)$ where $\bar{\tau}(w)$ is defined such that $v(p + t, w - \tau(w)) = v(p, w - \bar{\tau}(w))$. Here $\bar{\tau}(w)$ naturally exists a $v(p, \gamma)$ is strictly increasing in γ .Which on turn implies that $u_i(v(p + t, w - \tau(w), w) = u_i(v(p + t, w - \bar{\tau}(w), w)$, $\forall w$ .So the utility and labor supply for $\forall i$ are unchanged .Attaining utility of consumption $v(p, w - \bar{\tau}(w))$ at price p costs at least $w - \bar{\tau}(w)$. Now, let c_i be the consumer choice of individual i under the initial tax system $(\tau(\cdot), t)$ .Individual i attains utility $v(p, w - \bar{\tau}(w)) = v(p, w - \bar{\tau}(w))$ when choosing c_i. And, now $p \cdot c_i \geq w - \bar{\tau}(w)$ and we have that $\bar{\tau}(w) \geq \tau(w) + t \cdot c_i$ i.e. the government collects more taxes with $(\bar{\tau}(\cdot), t = 0)$ ∎

Paper Atkinson, Stiglitz (1976) showed that :" Even though there was a single "dimension" in which individuals differed (ability), in general, it seemed possible that one could extract information about that difference more efficiently by looking not just at the individual's labor supply, but also at his consumption patterns", see Stiglitz (2018).In the special case of separability[15] of utility function, Pareto efficient taxation required only an income tax; there was no benefit to be had by using information about consumption patterns. This paper Stiglitz (2018)sets the following proposition (link between commodity taxes and income taxes):

Proposition 2. There should be no distortionary taxation on the individual with the highest ability while the labor supply of the less able is distorted Stiglitz (2018)

for a further overview see Sadka (1976), Seade (1977), and (for an overview) Tuomala (1990) ,and see also Diamond (1998). The ith individual faces a before-tax wage (output per hour) of w_{ii}, and thus, in the absence of taxation, his budget constraint is simply

equation 40

$$\sum_{j} c_{ij} = w_i L_i$$

c_{ij} is the $i - th$ consumption of individual good j .The ith individual income is : $y_i = w_i L_i$ utility from consuming goods and disutility from work is:

equation 41

$$u_i = u_i(c_i, L_i)$$

Where $\frac{\partial u_i}{c_i} > 0$ and $\frac{\partial u_i}{\partial L_i} < 0$ is quasi concave. Vector of individual consumption function is : $c_i = (c_{i1}, \ldots, c_{ij}, \ldots)$. Individual maximization problem is:

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would not be taxed at a high rate, but rather, that luxuries like perfume might face high rates, even though they have a higher price elasticity than food

[15] Function of 2 independent variables is said to be separable if it can be expressed as a product of 2 functions, each of them depending on only one variable.

inequality 16

$$\max_{c_I, y_i} u_i(c_i, l_i) \ st \ \sum_j c_{ij} \leq w_i l_I - \tau(w_i l_i)$$

FOC is:

equation 42

$$\frac{\dfrac{du_i}{dl_i}}{\dfrac{du_i}{dc_i}} = -w_i(1 - \tau)$$

The left hand side is individual MRS, and right hand side is after-tax marginal return to working an extra hour. The problem of government is with Pareto efficiency.

Definition: *Pareto efficient tax structures are those (given the admissible set of taxes and the required public revenue) which are such that no one can be better off without making someone worse off.*

Here are identified properties of Pareto efficient tax structures which hold regardless of the social welfare function. See, e.g. Stiglitz (1982), Stiglitz(1987) and Brito et al (1990).Now, R is the government revenue and the required revenue is $\bar{R}$, n_i is the number of individuals of type i .If λ_i is the shadow price associated with the self-selection constraints and μ_i is the shadow price associated with the utility constraint.So, now the Lagrangian can be rewritten as:

equation 43

$$\mathcal{L} = n_2 v^2 + n_1 \mu(v_1 - u_1) + n_2 \lambda_2(v^2(c_2, y_2) - v^2(c_1, y_1)) + n_1 \lambda_1(v^1(c_1, y_1) - v^1(c_2, y_2))$$
$$+ \gamma((y_1 - c_1)n_1 + (y_2 - c_2)n_2 - \bar{R})$$

And the necessary FOC's :

1. $\frac{d\mathcal{L}}{dc_{1j}} = n_2 \mu \frac{dv^1}{dc_{1j}} - n_2 \lambda_2 \frac{dv^2}{dc_{1j}} + n_1 \lambda_1 \frac{dv^1}{dc_{1j}} - \gamma n_1 = 0$

2. $\frac{d\mathcal{L}}{dc_{2j}} = n_2 \mu \frac{dv^1}{dc_{2j}} + n_2 \lambda_2 \frac{dv^2}{dc_{2j}} - n_1 \lambda_1 \frac{dv^1}{dc_{2j}} - \gamma n_2 = 0$

3. $\frac{d\mathcal{L}}{dy_1} = n_1 \mu \frac{dv^1}{dy_1} - n_2 \lambda_2 \frac{dv^2}{dy_1} + n_1 \lambda_1 \frac{dv^1}{dy_1} + \gamma n_1 = 0$

4. $\frac{d\mathcal{L}}{dy_2} = n_2 \frac{dv^1}{dy_2} + n_2 \lambda_2 \frac{dv^2}{dy_2} - n_1 \lambda_1 \frac{dv^1}{dy_2} + \gamma n_2 = 0$

From this previous FOC's we derive that :

equation 44

$$\frac{\dfrac{dv^2}{dc_{2j}}}{\dfrac{dv^2}{dc_{1k}}} = 1 \ ; \frac{\dfrac{dv^2}{dy_2}}{\dfrac{dv^2}{dy_2}} = 1$$

equation 45

$$\frac{dv^1/dc_{1j}}{dv^1/dc_{1k}} = \frac{\gamma + \lambda_2 dv^2/dc_{1j}}{\gamma + \lambda_2 dv^2/dc_{1k}} ; \frac{dv^1/dc_{1j}}{dv^1/dy_1} = \frac{\gamma + \lambda_2 dv^2/dc_{1j}}{\gamma + \lambda_2 dv^2/dy_1}$$

The interpretation of previous expression is :

equation 46

$$a^i_{jk} = MRS_{ijk}(c_1, y_1)$$

Marginal rate of substitution between j, k and the bundle (c_i, y_i). The two individuals differ in their abilities. Now let $\lambda_2 \frac{\partial v^2}{\partial c_{1k}} = b$. Then $\frac{\frac{dv^2}{dc_{2j}}}{\frac{dv^2}{dc_{1k}}} = 1$; $\frac{\frac{dv^2}{dy_2}}{\frac{dv^2}{dy_2}} = 1$ can be rewritten as: $a^1_{jk} = \frac{\gamma + b a^2_{jk}}{\gamma + b}$ and it follows that: $a^1_{jk} - a^2_{jk} = \{\gamma(1 - a^1_{jk})\}/\{\gamma + b\}$. And in the case of separability the MRS between j, k is unaffected by the amount of leisure , so $a^1_{jk} = a^2_{jk}$ or $a^1_{jk} = a^2_{jk} = 1$, the denominator of $a^1_{jk} - a^2_{jk} = \{\gamma(1 - a^1_{jk})\}/\{\gamma + b\}$ is positive:

Proposition 3. There should be no commodity taxation on either high or low ability individuals if leisure and consumption are separable.

Derivation of Mirrlees 1971 optimal taxation model and some numerical solutions

In the Mirrlees (1971) model, all individuals have same utility function which depends positively on consumption, and negatively on labor supply ,which can be denoted as $u(c, l)$. Let's suppose the utility function g the agents in the economy Mirrlees (1971) model:
equation 47

$$\tilde{U}(c, l) = c - \frac{l^2}{2}$$

Where $y = \theta l$ и θ represents the level of skils of the worker. Now his social welfare function SWF is :$SWF(v) = \log(v)$. Now lets find the distribution of skills when $T(y) = 0.3$ which is Pareto with $h(y) = ky^{-k-1}y^k$[16]. Equation for the distribution of skills is $f(\theta) = h(y(\theta))y'(\theta)$, from the quasi-linear utility functions : $U(c, y, \theta) = c - \frac{1}{2}\left(\frac{y}{\theta}\right)^2$. And the tax function $T(y) = \tau y$, individual with skill level θ solves :
equation 48

$$\max_y (1 - \tau)y - \frac{1}{2}\left(\frac{y}{\theta}\right)^2$$

FOC is given as :$(1 - \tau) - \frac{y}{\theta^2} = 0$, which implies that $y = (1 - \tau)\theta^2$ and $f(\theta) = h(y(\theta))y'(\theta) = k(\theta)^{-k-1}y^k 2(1 - \tau)\theta = k((1 - \tau)\theta^2)^{-k-1}y^k 2(1 - \tau)\theta = 2k(1 - \tau)^{-k}\theta^{-2k-1}y^k = 2k\theta^{-2k-1}\theta_l^{2k}$. By integration one could get :$F(\theta) = \int_{\theta_l}^{\theta} f(\theta)d\theta = \int_{\theta_l}^{\theta} 2k(1 - \tau)^{-k}\theta^{-2k-1}y^k d\theta = [-(1 - \tau)^{-k}\theta^{-2k}y^k]_{\theta_l}^{\theta} = (1 - \tau)^{-k}\theta_l^{-2k-1}\left((1 - \tau)\theta_l^2\right)^k - (1 - \tau)^{-k}\theta^{-2k}y^k = 1 - \theta^{-2k}\theta_l^{2k}$. Now we can solve for numerical optimum. Let's use $y = 2$ and $k = 4$ and truncate the distribution[17] at the top x percentile for some small x. In this case :$\max_{v(\theta), u(\theta)} \int_{\theta_l}^{\theta^h} W[v(\theta)]f(\theta)d\theta$. Subject to :

$$\int_{\theta_l}^{\theta^h} \left(y(\theta) - e(v(\theta), y(\theta), \theta)\right)f(\theta)d\theta \geq 0; v'(\theta) = u_\theta\left[e(v(\theta), y(\theta), \theta)\right]$$

---

[16] This is a density of earnings function , dependent on v the skills of workers

[17] In statistics truncated distribution is a conditional distribution that comes as a result of the restriction of the domain of some other distribution or probability .

$y(\theta)$ is non decreasing function. Hamiltonian is formed as $:H = W[v(\theta)]f(\theta) + \lambda(y(\theta) - e(v(\theta), y(\theta), \theta))f(\theta) + \eta(\theta)U_\theta[e(v(\theta), y(\theta), \theta), y(\theta), \theta]$.

Standard conditions are as:

1. $\frac{\partial H}{\partial y} = 0 \Rightarrow \lambda f(1 - e_y) + \eta[u_{\theta c}e_y + u_{\theta y}] = 0$
2. $\frac{\partial H}{\partial v} == \eta' \Rightarrow W'f - \lambda e_v f + \eta u_{\theta c}e_v = -\eta'$

Transfersality conditions : $\eta(\theta_l) = \eta(\theta^h) = 0$ .From $W = \log(v)$ и $u(c, y, \theta) = c - \left(\frac{1}{2}\right)\left(\frac{y}{\theta}\right)^2$ will get the following derivatives :$u_\theta = \frac{y^2}{\theta^3}; u_{\theta c} = 0; u\theta_y = \frac{2y}{3}$; $W' = \frac{1}{v}$.Let us remember that $v = u(e(v, y, \theta), y, \theta)$,we have $1 = u_c e_v$ и $0 = u_c e_y + u_y$,therefore :$e_v = \frac{1}{u_c}; e_y = -\frac{u_y}{u_c} = \frac{y}{\theta^2}$. If we substitute in the optimality and control equations about the state variables one can get :

equation 49

$$\lambda f\left(1 - \frac{y}{\theta^2}\right) + \eta\left[\frac{2y}{\theta^3}\right] = 0 \text{ и } \frac{f}{v} - \lambda f = -\eta'$$

If we solve in the first equation for $y(\theta)$ we get : $y(\theta) = \frac{\lambda f(\theta)\theta^3}{\lambda f(\theta)\theta - 2\eta(\theta)}$. With the equation $\eta'\eta'(\theta) = \left(\lambda - \frac{1}{v(\theta)}\right)f(\theta)$. If we substitute for $y(\theta)$ in the constraint $:v'(\theta) = u_\theta[e(v(\theta), y(\theta), \theta), y, \theta] = \frac{y^2}{\theta^3} = \left(\frac{\lambda f(\theta)}{\lambda f(\theta)\theta - 2\eta(\theta)}\right)^2 \theta^3$ .In Saez (2001) optimal tax formula is given as :

equation 50

$$\tau = \frac{1 - \bar{g}}{1 - \bar{g} + \bar{\varepsilon}^u + \bar{\varepsilon}^c(a - 1)}$$

In another example that follows Mirrleees (1971) and Diamond (1998) Utility function is quasi linear:

equation 51

$$u(c, l) = c - v(l)$$

c is disposable income and the utility of suuply of labor $v(l)$ is increasing and convex in l. Earnings equal $w = nl$ where n represents innate ability. CDF of skills distribution is $F(n)$, it's PDF is $f(n)$and support range is $[0, \infty)$. Government cannot observe abilities instead it can set taxes asa function of labor income $c = w - \tau(w)$.Individual n chooses l_n to maximize :

equation 52

$$\max(nl - \tau n(l) - v(l))$$

When marginal tax rate τ is constant, the labor supply f-ction is given as: $l \rightarrow l(n(1 - \tau))$ and it is implicitly defined by the $n(1 - \tau) = v'(l)$. And $\frac{dl}{d(n(1 - \tau))} = \frac{1}{v''(l)}$, so the elasticity of the net-of-tax rate $1 - \tau$ is:

equation 53

$$e = \frac{\left(\frac{n(1 - \tau)}{l}\right)dl}{d(n(1 - \tau))} = \frac{v'(l)}{lv''(l)}$$

As there are no income effects this elasticity is both the compensated and the uncompensated elasticity.The government maximizes SWF :

equation 54

$$W = \int G(u_n)f(n)dn \quad s.t. \int cnf(n)dn \leq \int nlnf(n)dn - E(\lambda)$$

u_n denotes utility, $w_n = nl_n$ denotes earnings, c_n denotes consumption or disposable income, and $c_n = u_n + v(l_n)$.By using the envelope theorem and the FOC for the individual, u_n satisfies following:

equation 55

$$\frac{du_n}{dn} = \frac{lnv'(ln)}{n}$$

Now the Hamiltonian is given as:
equation 56

$$\mathcal{H} = \left[G(u_n) + \lambda \cdot \left(nl_n - u_n - v(l_n)\right)\right]f(n) + \phi(n) \cdot \frac{lnv'(ln)}{n}$$

In previous $\phi(n)$ is the multiplier of the state variable. The FOC with respect to l is given as:
equation 57

$$\lambda \cdot \left(n - v'(l_n)\right) + \frac{\phi(n)}{n} \cdot \left[v'(l_n) + l_n v''(l_n)\right] = 0$$

FOC with respect to u is given as:
equation 58

$$-\frac{d\phi(n)}{n} = [G'(u_n) - \lambda]$$

If integrated previous expression gives: $-\phi(n) = \int_n^\infty [\lambda - G'(u_m)]f(m)dm$ where the transversality condition $\phi(\infty) = 0$,and $\phi(0) = 0$, and $\lambda = \int_0^\infty G'(u_m)f(m)dm$ and social marginal welfare weights $\frac{G'(u_m)}{\lambda} = 1$. Using this equation for $\phi(n)$ and all previous $n - v'(ln) = n\tau'(w_n)$, and that

equation 59

$$\frac{[v'(l_n) + l_n v''(l_n)]}{n} = \left[\frac{v'(l_n)}{n}\right]\left[1 + \frac{1}{e}\right]$$

We can rewrite FOC with respect to l_n as:
equation 60

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left(1 + \frac{1}{e}\right) \cdot \left(\frac{\int_n^\infty (1 - g_m)dF(m)}{nf(n)}\right)$$

In previous expression $g_m = \frac{G'(u_m)}{\lambda}$ which is the social welfare on individual m . The formula was derived in Diamond (1998) . If we denote $h(w_n)$ as density of earnings at w_n if the nonlinear tax system were replaced by linearized tax with marginal tax rate $\tau = \tau'(w_n)$ we would have that following equals $h(w_n)dw_n = f(n)dn$ and $f(n) = h(w_n)l_n(1 + e)$,henceforth $nf(n) = w_n h(w_n)(1 + e)$ and we can write previous equation as:
equation 61

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \frac{1}{e} \cdot \left(\frac{\int_n^\infty (1 - g_m)dF(m)}{w_n h(w_n)}\right) = \frac{1}{e} \cdot \left(\frac{1 - H(w_n)}{w_n h(w_n)}\right) \cdot \left(1 - G(w_n)\right)$$

In the previous expression $G(w_n) = \int_n^\infty \frac{dF(m)}{1 - F(n)}$ is the average social welfare above w_n .If we change variables from $n \to w_n$, we have $G(w_n) = \int_{w_n}^\infty \frac{g_m dH(w_m)}{1 - H(w_n)}$.The transversality condition implies $G(w_0 = 0) = 1$. In the Mirrlees(1971) model government , maximizes[18] :$SWF = \int_0^\infty G(u_w)f(w)dw$. In the previous expression $G(u_w)$ represents the concave utility function[19].The constraint here is given as: $\int_0^\infty G(u_w)f(w)dw \leqq \int_0^\infty w_l f(w)dw - E$,where E are government expenditures. Now, about Pareto distributions it is well known fact that

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[18] Here we make assumption that wages =skill level
[19] Now, for a concave function $f : (a, b) \to R$ is continuous in $IntA$. This function $f : (a, b) \to R$ is concave in the interval (a, b) , if for every $x_1, x_2 \in (a, b), a \in (0,1)$, it follows $f(ax_1 + (1 - a)x_2) < af(x_1) + (1 - a)f(x_2)$.

$:\frac{ratio\ average}{threshold} = constant$ .Now if we denote the average wage $w^*(w) > w$, and if w is a threshold, then $w^*(w)$ can be expressed as : $w^*(w) = \int_{w_m>w} wf(w)dw/ \int_{w_m>w} f(w)dw = \int_{w_m>w} dw/w^a / \int_{w_m>w} dw/w^{1+a} = \frac{aw}{a-1}$. In the previous expression a represents the shape parameter of the Pareto distribution. And $a = \frac{b}{b-1}$ i.e. $\frac{w^*(w)}{w} = b$ .About the Pareto distribution PDF of this distribution is given as : $1 - F(w) = \left(\frac{k}{w}\right)^a$,and CDF of the function is given as $f(w) = \frac{ak^a}{w^{1+a}}$,[20]that is $\lim_{w\to\infty} \frac{\left(\frac{k}{w}\right)^a}{w\cdot\left(\frac{ak^a}{w^{1+a}}\right)}$ by applying $\lim_{x\to a}[c \cdot f(x)] = c \cdot \lim_{x\to a} f(x) \Rightarrow \frac{1}{ak^a} \cdot \lim_{w\to\infty} \frac{\left(\frac{k}{w}\right)^a}{w\cdot\left(\frac{ak^a}{w^{1+a}}\right)} = \frac{1}{ak^a} \cdot \lim_{w\to\infty}(k^a) = \frac{1}{ak^a} \cdot k^a = \frac{1}{a}$ .hence the formula of marginal income for top earners

equation 62
$$\tau^* = \frac{1}{1+a\cdot\varepsilon}.$$

In Piketty, T., Saez.E., and Stantcheva,S.(2014), it is well defined aggregate elasticity of income as:

equation 63
$$\varepsilon = \frac{1-\tau}{z}\frac{dz}{d(1-\tau)} \ ,$$
where z is taxable income and $z = y - x$, where y is the real income, and x is sheltered income [21],taxable income s used in the calculation for Pareto parameter $a = \frac{z}{z-\bar{z}}$. Tax avoidance elasticity component is given as $\varepsilon_1 = \frac{1-\tau}{z}\frac{dx}{1-\tau}$, and $\varepsilon_2 = \frac{1-\tau}{z}\frac{dy}{1-\tau}$ is the real labor supply elasticity. The bottom tax formula in Mirrlees (1971) is derived in Piketty, Saez (2013).

equation 64
$$\frac{\tau'(0)}{1-\tau'(0)} = (g_0 - 1) \cdot \frac{F(n_0)}{n_0 f(n_0)} \Rightarrow \tau'(0) = \frac{g_0 - 1}{g_0 - 1 + \frac{n_0 f(n_0)}{F(n_0)}}$$

In previous expression $g_0 = \frac{G(u_0)u_c}{\lambda}$ is the social marginal weight of the non-worker. From previous we know that $n_0\left(1 - \tau'(0)\right)u_c(c_0, 0) + u_l(c_0, 0) = 0$ which defines $n_0(1 - \tau'(0), c_0)$.The effect of $1 - \tau'(0)$ on n_0 is such that $\frac{\partial n_0}{\partial(1-\tau'(0))} = -\frac{n_0}{1-\tau'(0)}$. Hence,the elasticity of the fraction non-working $F(n_0)$ with respect to $1 - \tau'(0)$ is given as:

equation 65
$$e_0 \equiv -\frac{1-\tau'(0)}{F(n_0)}\frac{dF(n_0)}{d(1-\tau'(0))}\Big|_{c_0} = -\ -\frac{1-\tau'(0)}{F(n_0)} \cdot f(n_0) \cdot \frac{\partial n_0}{\partial(1-\tau'(0))} = \frac{n_0 f(n_0)}{F(n_0)}$$

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[20] $\frac{\left(\frac{k}{w}\right)^a}{w\cdot\left(\frac{ak^a}{w^{1+a}}\right)} = \frac{\frac{k^a}{w^a}}{w\cdot\left(\frac{ak^a}{w^{1+a}}\right)} = \frac{\frac{k^a}{w^a}}{w\cdot\frac{ak^a}{w\cdot w^a}} = \frac{1}{a}$

[21] Investments or investment accounts that provide favorable tax treatment , or activities and transactions that lower taxable income.

So we can rewrite $\tau'(0) = \frac{g_0-1}{g_0-1+\frac{n_0 f(n_0)}{F(n_0)}}$ to :

equation 66

$$\tau'(0) = \frac{g_0 - 1}{g_0 - 1 + e_0}$$

About social marginal weights: Social marginal welfare weight[22] is given as:
equation 67

$$g_i = \frac{\omega_i G'(u^i) u_c^i}{\lambda}$$

g_i measures the dollar/euro value (in terms of public funds) of increasing consumption of individual i by \$1 or €1. Under utilitarian criterion, $g_i = \frac{u_i^c}{\lambda}$ is directly proportional to the marginal utility of consumption.   Under Rawlsian criterion all the $\forall g_i = 0$ except for the most disadvantaged (poorest). Social welfare function can be :

1. $SWF = \int U^i \, di$-Utilitarian or Benthamite,
2. $SWF = min_i U^i$- Rawlsian $SWF = \int U^i di \to G(U) = \frac{U^{1-\gamma}}{1-\gamma}$ if $\gamma = 0$ function is utilitarian , Rawlsian if $\gamma = \infty$.
3. With Pareto weights: $SWF = \int \mu_i U^i \, di$ where μ_i is exogenous.

The optimal tax government formula with Rawlsian government [23]would be :
equation 68

$\frac{T'(w(h))}{1-T'(w(h))} = \left(\frac{1+\varepsilon}{\varepsilon}\right)\frac{1-F(w)}{wf(w)}$ or $\frac{T'(w(h))}{1-T'(w(h))} = \left(\frac{1+\varepsilon}{\varepsilon}\right)\frac{\psi(w)-F(w)}{wf(w)}$

Now if we divide and multiply by $1 - F(w)$ we get : $\frac{T'(w(h))}{1-T'(w(h))} = \left(\frac{1+\varepsilon}{\varepsilon}\right)\frac{\Psi(w)-F(w)}{1-F(w)}\frac{1-F(w)}{wf(w)}$ .In the previous formula $\left(\frac{1+\varepsilon}{\varepsilon}\right) = A(w)$, elasticity and efficiency argument, $\frac{\Psi(w)-F(w)}{1-F(w)} = B(w)$, measures the desire for redistribution :if the sum of weights $\psi(w)f(w)$ is below w is relative high to the weights above , the government will like to tax more, this part $\frac{1-F(w)}{wf(w)} = C(w)$ measures the density of the right tail of the distribution and higher density will be associated with higher taxes. This is ABC tax model by Diamond (1998) . Next, we will do numerical simulations on Mirrlees model and we can observe the marginal tax rate schedules.

Numerical solutions of Mirrlees optimal tax model
This simulation here captures section 8 (case I) of the original paper of MIrrlees 1971 paper and section 9. So the setup of the code due to Ben Lockwood (benlockwood.com) is as follows:
equation 69

$$\begin{cases} u = \alpha \log x + \log(1 - y) \\ G(u) = -\frac{1}{\beta} e^{-\beta u} \\ f(n) = \frac{1}{n} \exp\left[-\frac{(\log n + 1)^2}{2}\right] \end{cases}$$

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[22] The marginal social welfare weight on a given individual measures the value that society puts on providing an additional dollar of consumption to this individual.

[23] The social welfare function that uses as its measure of social welfare the utility of the worst-off member of society. The following argument can be used to motivate the Rawlsian social welfare function.

Skills are assumed to be lognormally distributed with the average $\bar{n} = \frac{1}{\sqrt{e}} = 0.607$. .So now, the equations :

equation 70

$$\begin{cases} \dfrac{dv}{dn} = -\dfrac{v}{n}\left(2 + \dfrac{nf'}{f}\right) - \dfrac{1}{n^2 u_1} + \dfrac{\lambda G'}{n^2} \\ \qquad \dfrac{du}{dn} = -\dfrac{yu_2}{n} \end{cases}$$

Would become:

equation 71

$$\begin{cases} \dfrac{dv}{dn} = -\dfrac{v \log n}{n} - \dfrac{x}{\alpha n^2} + \dfrac{\lambda}{n^2}\, e^{-\beta u} \\ \qquad \dfrac{du}{dn} = \dfrac{y}{n(1-y)} \end{cases}$$

Where : $v = \dfrac{\left[1 + \frac{u_2}{nu_1}\right]}{\psi_y} = \dfrac{1 - \frac{x}{\alpha n(1-y)}}{1/(1-y)^2} = (1-y)\left(1 - y - \dfrac{x}{\alpha n}\right)$ and $e^u = x^\alpha(1-y)$ and when $\beta = 0$;

$s = 1 - y$ and $t = \log n$ .Now $r = s^{\frac{1-\alpha}{\alpha}}(s^2 - v)$,so that : $\alpha \dfrac{dr}{dt} = \dfrac{1-(1-\alpha)}{s}r$. The marginal tax rate is :

$$\tau = \frac{v}{s^2} \; ;$$

So as $\tau \to \infty$ $\theta \to 0$ in the original Mirrlees (1971) paper θ denotes marginal tax rate.And, it follows that :

equation 72

$\theta = \dfrac{v}{s^2} \sim \dfrac{1+\alpha}{\tau}$ or $\theta = \dfrac{v_t}{s_t^2} \to \dfrac{1+\alpha}{1+\alpha+\gamma}$

Assumed production function is linear : $x = z + a$, the average product of labor is x/z .In the full optimum it is maximized:

equation 73

$$\begin{cases} \displaystyle\int [\log x + \log(1-y)]f(n)dn \; s.t. \\ \displaystyle\int xf(n)dn = \int nyf(n)dn + a \end{cases}$$

where $x = x^0$ and $\log(1-y) + \dfrac{ny}{x^0}$ and maximization yields $y_n^0 = \left[1 - \dfrac{x^0}{n}\right]$.The value of x^0 is:

equation 74

$$x^0 = \int_{x^0}^{\infty} (n - x^0)f(n)dn + a$$

Where $\int_0^\infty f(n)dn = 1$.

Table 3 FOC's for the Mirrlees model

iteration	Func-count	f(x)	Norm of step	First-order optimality
0	3	1.37E-01		

1	6	9.01E-04	0.000224	0.00276
2	9	2.13E-04	2.97E-01	0.000677
3	12	5.02E-08	4.86E-01	9.93E-06
4	15	2.87E-14	6.74E-03	7.50E-09

Table 4 skills, consumption and earnings for the Mirrlees model

F(n)-skills	x-cons.	y-income	x(1-y)	z-earnings
0	0.0424	0	0.0424	0
0.1	0.116	0.3894	0.0708	0.0869
0.5	0.18	0.4382	0.1011	0.1612
0.9	0.2888	0.4686	0.1535	0.2842
0.99	0.4315	0.4841	0.2226	0.4412

Table 5 average and marginal tax rates for Mirrlees model

z-earnings	x-consumption	average tax rate	marginal tax rate
0	0.0424	-Inf	0.2147
0.05	0.0847	-0.54	0.2336
0.1	0.1271	-0.1558	0.2223
0.2	0.214	0.0273	0.1993
0.3	0.3031	0.0817	0.1824
0.4	0.3937	0.1052	0.1698
0.5	0.4856	0.1171	0.1599

Figure 2 Earnings and taxes paid by Mirrlees schedule earnings in Mirrlees model

Figure 3 distribution of skills and
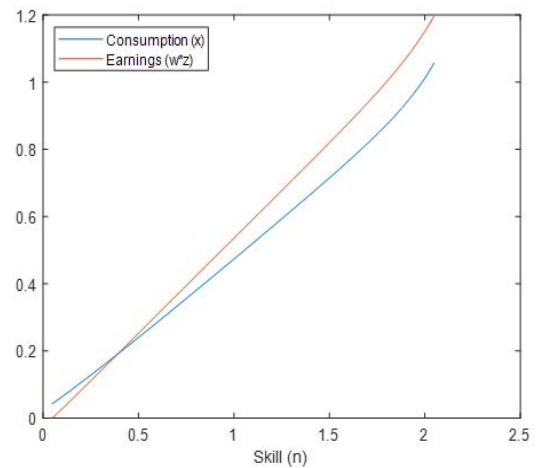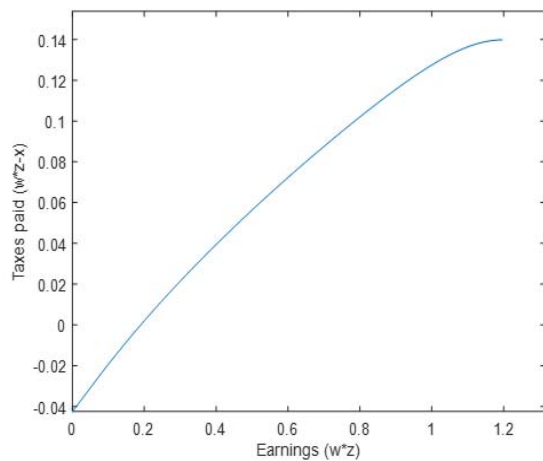
Conclusion

This paper has characterized the set of Pareto efficient income schedules in Mirrlees (1971) model. Namely the models obtained by Werning (2008) provides versions of the Pareto optimality condition that may be useful of testing this condition, or that may provide framework for quantity analysis. These models were avoiding the specification by normative welfare criterion, and the analysis was more able to focus on the elements of positive economy. The optimality conditions shed new light in on the importance of the skill distribution and other parameters in shaping efficient tax schedules. Atkinson-Stgilitz theorem (1976) on the other hand was a reminder that in presence of optimal non-linear income tax, the role of commodity taxation was limited see Stiglitz (2018). Further propositions for optimal Pareto income taxation are: There should be no distortionary taxation on the individual with the highest ability while the labor supply of the less able is distorted, there should be no commodity taxation on either high or low ability individuals if leisure and consumption are separable. These models of Pareto efficient taxation provide most useful insight into what economic theory has to say about the design of tax structures i.e. Pareto efficient tax structures maximize the utility of one individual (group) given the utility of others and given the budget balance and informational constraints on the government. The optimal income tax problem is in the middle or the asymmetric information with adverse selection. Individuals it is assumed that they differ in ability and productivity when they have same endowments and utility functions. The Mirrlees optimal tax problem could be thought of extracting information about those differences. The information about individuals did not just end up with different abilities, one could extract information about the differences by looking into consumption patterns also. Though in the case of separability of the utility function Pareto efficient taxation required only income taxation. Pareto efficient taxation takes positive and normative characterization in: redistribution vs efficiency and Pareto efficiency, unlike Mirrleesian optimal taxation such as: Mirrlees (1971), Diamond (1998), Saez (2001) which characterizes redistribution vs efficiency as positive criterion but utilitarian social welfare function is normative criterion. This paper provides similarities between Mirrleesian and Pareto efficient taxation embedded into Mirrleesian framework.

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TOURIST VALORIZATION OF ACTIVE MONASTERIES IN R.N. MACEDONIA

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Abstract
Macedonia is a biblical country and a crossroads of many religions (Christianity, Islam, Judaism, etc.). The northern part of Macedonia[1] is a good example of a republic with a multi-confessional space that has exhibition monasteries for religious tourism. In the article, using literature and empirical research, all 40 active monasteries are processed and evaluated. Active monasteries are those in which there is constant monasticism - male or female. The aim of the paper is through value analysis to see the role of active monasteries in the development of religious tourism in RN Macedonia. For better visibility, the evaluation of active monasteries is grouped by planning regions and the country as a whole. In valorization we use six sets of parameters for all eight planning regions equally. In addition to the text, several tables and a thematic map have been moved. Finally, the conclusion presents recommendations for comprehensive institutional planning and practice of monastery tourism, as a major part of Macedonian religious tourism.

Key words: analysis, parameters, planning regions, monastery tourism, religious tourism
JEL Classification: Z32 Tourism and Development; Z39 Tourism: Other

Introduction
Beliefs are as old as man. On the territory of RS Macedonia there are sanctuaries and places of worship from prehistory, ancient and medieval, to the present day. It is estimated that on the territory of the country there are over 4000 different holy places, ancient temples, early Christian basilicas, medieval temples, religious buildings built in the last few centuries and religious temples and other buildings built in modern times.

Detailed research on religious buildings and their role in the development of religious tourism in the country has not been conducted. Only in 2011 a Map of religious buildings in the Republic of Macedonia was prepared (Pavlovska, et al., 2011). Thus, according to the map, in 2011 2468 religious buildings were registered, of which 1842 Orthodox, 580 Muslim and 46 other religious buildings. There are no more recent published data on religious buildings.

Starting from the previous and motivated by research motives, we researched the total number of religious buildings. In the research we also use data from the websites of the Macedonian Orthodox Church - Archdiocese of Ohrid (MOC - AO) and its dioceses, then data from the IRC, data from the Commission for Relations with Religious Communities and Groups (CRRCG), data obtained from the Internet. (http://www.mpc.org.mk/MPC/eparhii.asp ; https://mk.wikipedia.org/wiki/ ; https://www.kovz.gov.mk/ ; http://www.gragjanskisvet.org.mk/ downloaded from 07.12. until 18.12.2021)

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[1] *Additions to the name Macedonia in the last eight decades (1944-2019): Democratic Federal Republic of Macedonia, DFRM (1944-1946); People's Republic of Macedonia, PRM (1946-1963); Socialist Republic of Macedonia, SRM (1963-1991); Republic of Macedonia, RM (1991-2019), recognized by 133 countries worldwide; application to the UN with temporary reference Former Yugoslav Republic of Macedonia, FYROM (1993-2019); Republic of Northern Macedonia, RNM (2019-). https://en.wikipedia.org/wiki/North_Macedonia retrieved on 08.12.2021*

The research obtained the following data: in RS Macedonia, in 2021 there are 2870 religious buildings, of which 2100 Orthodox (churches, monasteries, chapels), 700 Muslim (mosques, tekkes) and 70 other religious buildings (Catholic churches, monasteries, other churches, synagogues and buildings of religious groups).

We emphasize that the purpose of this paper is only 40 active monasteries, and we will talk about other types of buildings and their characteristics in the next opportunity.

Material and methods
The materials used in the research are the aforementioned literature and web pages. However, to achieve the goal, tourist valorization of the active monasteries, we use the method of field research, telephone call and personal survey with monks, nuns and other clergy (conducted in the summer months of 2020 and 2021), from which are obtained valuable data on monastic potentials for tourism development.

From this research, a small part of the monasteries with lodgings was published, and only for the municipality of Bitola. (Dimitrov, 2021). In this research paper, generalized evaluations of 40 active monasteries with male monasticism (21 monastery) and female monasticism (19 monastery) will be presented. The number of monks in the mentioned monasteries is variable, so the number of monks / nuns in the monasteries ranges from 230-250. Minimum number of monks in monasteries ranges from 2 to a maximum of 30 (Bigorski monastery). The number of monasticism proportionally affects the realization of the six groups of potentials listed below. That is, the more monasticism, the greater the possibilities for maximum realization of the mentioned groups of potentials. That is, the more monasticism, the greater the possibilities for maximum realization of the mentioned groups of potentials.The main tool for data collection is the 29-item survey questionnaire - individual potentials. The questions are grouped into 6 groups of potentials. The question form is simple with the possibility of evaluation, on a scale of five numerical points or grades from 1 to 5 (1 insufficient, 2 sufficient, 3 good, 4 very good, 5 excellent). (See: Table 1).

Table 1. Group of potentials and excerpt of the questions in the survey questionnaire

SN.	Group of potentials	Individual potentials, their number and the questions in the survey questionnaire
1.	Access and infrastructure	*Access road, parking, electricity, water, toilet. (5 potentials - 5 questions)* *-Evaluate the access road to the monastery, with points 1-5* *-Evaluate the parking lot of the monastery, with points 1-5* *-Evaluate the electricity supply in the monastery, with points 1-5* *-Evaluate the water supply in the monastery, with points 1-5* *-Evaluate the toilet in the monastery, with points from 1 to 5*
2.	Accommodation and catering	*Accommodation facilities for tourists / visitors (konaci, etc.) and catering (dining room, kitchen, restaurant). (4 potentials - 4 questions)* *-Evaluate visitor lodgings, with points from 1 to 5* *-Evaluate the dining room for visitors, with points from 1 to 5* *-Evaluate the kitchen for visitors, with points from 1 to 5* *-Evaluate the restaurant for visitors, with points from 1 to 5*
3.	Cultural and recreational offer	Additional cultural offer (gallery, memorial room, exhibition, music event - concert, etc., art colony), additional recreational offer (hiking trails, children's corner, workshops, small zoo). The offers in the monastery are valued. (9 potentials - 9 questions)

		-Evaluate the gallery in the monastery, with points from 1 to 5 *-Evaluate the memorial room, with points from 1 to 5* *-Evaluate the exhibition exhibits, with points from 1 to 5* *-Evaluate the music event - concert, etc., with points from 1 to 5* *-Evaluate the art colony, with points from 1 to 5* *-Evaluate the pedestrian path, with points from 1 to 5* *-Evaluate the children's corner, with points from 1 to 5* *-Evaluate the workshop, with points from 1 to 5* *-Evaluate the small zoo, with points from 1 to 5*
4.	Communication with the public	Website and social media. (2 potentials - 2 questions) *-Evaluate the website of the monastery, with points from 1 to 5* *-Evaluate the social network of the monastery, with points 1 - 5*
5.	Economy and production	Production of organic food and domestic production, monastic handicrafts, breeding of domestic animals and / or bees and publishing. Economy and production for own needs, and crafts, publishing for sale (6 potentials - 6 questions) *-Rate food production on a scale of 1 to 5* *-Evaluate domestic production, with scores from 1 to 5* *-Evaluate the production of monastery handicrafts, with points from 1 to 5* *-Evaluate the domestic production of domestic animals, with points from 1 to 5* *-Evaluate the domestic production of bees and honey, with points from 1 to 5* *-Evaluate the publication of books, brochures, etc. on a scale of 1 to 5*
6.	Current conditions of the monastery	Holding over 1 mass gathering of citizens, condition of the konaci, rooms, premises and monastery property. (3 potentials - 3 questions)-- *-Assess the situation with the konaci, the rooms, with points from 1 to 5* *-Evaluate the mass gathering in the monastery, with points 1-5* *-Evaluate the property of the monastery, with points from 1 to 5*
To-tal.	6 groups of potentials	**A total of 29 questions of individual potentials**

Results and discussion

The results of the research are placed in three tables and one thematic map. Namely, Tables 2 and 3 evaluate the 6 group potentials of all 40 active monasteries and summarized by planning regions. Thus, monasteries with the highest values of over 4 points are only two monasteries: Bigorski Monastery - St. John the Baptist (male monastery) in the Polog region, with 4.6 points and the Monastery "St. Archangels "or monastery" St. Naum Ohridski "(male monastery), in the Southwest region, with 4.3 points. The high amount of value points is due to the solid potentials for access, infrastructure, accommodation and catering for visitors, communication with the public, the current state of the monastery, cultural and recreational offer and economy and production and for visitors.

Monasteries with a value of 3 and over 3 points, are 9 monasteries (Monastery of St. Gavril Lesnovski - Lesnovski Monastery (male monastery) with 3.7 points; Monastery "St. John the Baptist" - Slepchanski Monastery (female monastery) with 3.6 points; Monastery "St. Joachim Osogovski" - Osogovo Monastery (male monastery) with 3.4; Monastery "St. Demetrius" -

Markov Monastery (female monastery) with 3.3; Monastery "Assumption of the Most Holy Mother of God" - Matka Monastery (female monastery) with 3.3; Stavropigial Monastery "Nativity of the Virgin" - Kalishta (male monastery) with 3.2; Monastery "Introduction to the Virgin" - Monastery Prechista (female monastery) with 3.1; Monastery "Holy Transfiguration" - Monastery Zrze Monastery of St. Athanasius the Great - Leshok Monastery (male monastery) with 3.1 value point Southwest region has 3 monasteries with over 3 value points, Skopje and Pelagonija regions have 2 monasteries with over 3 value points, etc.

More than half of the active monasteries (27 monasteries or 67.5%) have potentials of 2 and over 2 value points. The eastern region has the largest number of active monasteries with potential values of 2 and over 2 points, namely 7 monasteries, followed by the southeastern 6, Pelagonija 5 monasteries, etc. Only two active monasteries have the least value points above 1, which means that significantly more should be invested in them.

Table 2. Evaluation of the potentials of 40 active monasteries in 8 planning regions

Number	Monasteries after planning regions	Group of potentials						
		Access and infrastructure	Accommodation and catering	Cultural and recreational offer	Communication with the public	Economy and production	Current conditions of the monastery	Average in index points
1	Monastery "Nativity of the Mother of God" - village Sogle (female monastery)	5	3	1	1	3	3,5	2,7
2	Polog Monastery "Saint George the Great Martyr" (female monastery)	4,0	2,5	2,0	1,0	3,2	3,5	2,7
To.	**Vardar planning region** *(average)*	**4,5**	**2,7**	**1,5**	**1,0**	**3,1**	**3,5**	**2,7**
1	Monastery of St. Gavrli Lesnovski - Lesnovski monastery (male monastery)	4,3	4	3	2	4,7	4,5	3,7
2	Monastery "East Friday - Balaklija" - Delchevo (male monastery)	4,6	2,5	2	1	1	3	2,3
3	Berovo Monastery "Assumption of the Mother of God" (male monastery)	4	1	1,5	2	3	3	2,4
4	Stavropegial Monastery "St. Gabriel the Great" - Berovo (male monastery)	2,3	2,5	2	1	2,5	3	2,2
5	Monastery "St. Spiridon" - Zletovo (female monastery)	4,3	1	1,5	1	1,5	4,5	2,3
6	Monastery "St. Panteleimon" - Kocani (female monastery)	3,6	2	1,5	1	1,7	3,5	2,2
7	Berovo Monastery "St. Archangel Michael" (female monastery)	4,3	1	1,5	1	3	3,5	2,4

To.	East planning region *(average)*	3,9	2,0	1,8	1,3	2,5	3,5	2,5
1	Stavropigial Monastery "Nativity of the Mother of God" - Kalishta (male monastery)	5	3	4	1	2	4,5	3,2
2	Monastery of St. Archangels or monastery "St. Naum Ohridski "- (male monastery)	5	5	4,5	4	2,2	5	4,3
3	Monastery "Bogorodica Perivlepta" (male monastery)	4,3	1	3	1	1	3,5	2,3
4	Monastery "Nativity of the Mother of God" - v. Monastery (male monastery)	4,3	1,5	2	1	1,2	4	2,3
5	Monastery "Si Sveti" - v. Leshani (male monastery)	4,3	1	1,5	1	1,2	3	2
6	Raichki Monastery - St. вмч. Georgia the Victorious (female nunnery)	4	1	2,5	2,5	3,2	5	3
7	Monastery "St. George" - v. Knezino (female monastery)	4,6	1	2	2	1,2	3,5	2,4
8	Monastery "Introduction of the Mother of God - Pure" - Dolenci Monastery - Kicevo (female monastery)	4,6	2	2	2	3,5	4,5	3,1
To.	Southwest planning region *(average)*	4,5	1,9	2,7	1,8	1,9	4,1	2,8
1	Monastery "Holy 40 Martyrs of Sebastia" - v. Bansko (male monastery)	4,3	1	2,5	1	2,5	3	2,4
2	Monastery "St. Anthony and George" - v. Novo Selo (male monastery)	4	1,5	2,5	1	2,7	3	2,4
3	Veljushki Monastery "Introduction to the Mother of God" - v. Veljusa (female monastery)	3,6	2	3	1	3,7	4	2,9
4	Monastery "St. Leontius" - v. Vodoca (female monastery)	4,3	2	2,5	1	3	4	2,8
5	Monastery "St. Clement and Nahum of Ohrid" - v. Hamzali (female monastery)	4	1	1,5	1	2	2,5	2,0
6	Monastery complex "Parthenius Zografski" - Dojran (female monastery)	4,6	1	2,5	1	1,2	2,5	2,1
To.	Southeast Planning Region *(average)*	4,1	1,4	2,4	1,0	2,5	3,1	2,4
1	Monastery "Holy Transfiguration" - v. Zrze (male monastery)	5	1	2	3	4,2	3,5	3,1
2	Monastery "Assumption of the Most Holy Mother of God" - Treskavec (male monastery)	4,3	2,5	2	2,5	1	4	2,7
3	Monastery "St. Nicholas" - v. Monastery (male monastery)	3	1	1,5	2	2,7	3	2,2
4	Monastery "St. Peter" - v. Crneec (male monastery)	3	1	1,5	1,5	1,5	3	1,9
5	Monastery "Assumption of the Most Holy Mother of God" - v. Jankovec (male monastery)	4,3	1,5	1,5	2	1,7	3	2,3
6	Monastery "St. Archangel Michael" - Varos (female monastery)	4,6	1,5	1,5	1	2	4	2,4

7	Monastery "St. John the Baptist" - v. Slepche (female monastery)	4,3	2	3	4	4,7	3,5	3,6
8	Monastery "St. Athanasius the Great" - v. Zurche (female monastery)	4,3	2	1,5	1	4,2	3	2,6
To.	**Pelagonija planning region** *(average)*	4,1	1,5	1,8	2,1	2,8	3,3	2,6
1	Lesok Monastery St. Athanasius the Great (male monastery)	5	4,5	3	1,5	1	4	3,1
2	Bigorski monastery St. John the Baptist (male monastery)	4,6	5	3,5	5	4,7	5	4,6
To.	**Polog planning region** *(average)*	4,8	4,7	3,2	3,2	2,8	4,5	3,8
1	Monastery "St. Joachim Osogovski" - Kriva Palanka (male monastery)	5	4,5	2	2	2	5	3,4
2	Monastery "St. George" - v. Biljanovce (male monastery)	4	1	1	1	1	2,5	1,7
To.	**Northeast planning region** *(average)*	4,5	2,7	1,5	1,5	1,5	3,7	2,5
1	Nereshki Monastery "St. Martyr. Panteleimon" (male monastery)	5	1	2	1	1,5	3	2,2
2	Markov Monastery "St. Demetrius" - v. Markova Sushica (female monastery)	4	1,5	2,5	3,5	4,2	4	3,3
3	Monastery "Assumption of the Most Holy Mother of God" - Matka (female monastery)	4	2,5	3,5	2	4,2	3,5	3,3
4	Monastery "St. Nicholas" - v. Ljubanci (female monastery)	4	1	1,5	1	2,2	2,5	2,0
5	Monastery "Holy Archangels" - v. Kucevishte (female monastery)	2,6	1,5	1,5	1	2,5	3	2,0
To.	**Skopje planning region** *(average)*	3,9	1,5	2,2	1,7	2,9	3,2	2,5
40	**TOTAL** *(average)*	4,3	2,3	2,1	1,7	2,5	3,6	2,7

Table 3. Number of monasteries with value points by planning regions

Planning region	Number of monasteries with value points			
	Over 1 point	2 and over 2 points	3 and over 3 points	4 and over 4 points
Vardar (2)	0	2	0	0
East (7)	0	7	0	0
Southwest (8)	0	4	3	1
Southeast (6)	0	6	0	0
Pelagonija (8)	1	5	2	0
Polog (2)	0	0	1	1
Northeast (2)	1	0	1	0
Skopje (5)	0	3	2	0
Total (40)	**2**	**27**	**9**	**2**

From the analysis of the data for a group of potentials for tourist evaluation of the planning regions, in Table 4, we can comment on the following.

The group of potentials - access and infrastructure has the highest average value of 4.3 points. Of the regions, the highest value is in the Polog region with a high 4.8 points, and the lowest in the eastern and Skopje regions with 3.9 points. The other five regions have values of 4.5 and 4.1 points. These data give us information that almost all active monasteries have access and some infrastructure.

The group of potentials - accommodation and catering has an average value of 2.3 points, of which the highest value has the Polog region with high 4.7 points, followed by Vardar and Northeast region with 2.7 points, and the smallest southeast region with 1.4 points . In the other four regions, the average values range from 1.5 to 2.0 points.

These data speak of "free space" for the construction of accommodation facilities and catering facilities in the monasteries or in their immediate vicinity, in order to promote religious tourism or more specifically, the development of monastic tourism.

The group of potentials - cultural and recreational offer has an average value of 2.1 points, of which the highest value has the Polog region with 3.2 points, followed by the southwest region with 2.7 points, and the lowest value have the Vardar and northeast region with 1, 5 points. In the other five regions, the average values range from 1.8 to 2.4 points. This group of potentials has opportunities to enrich with new content that will be a motive plus for the development of religious-monastery tourism.

The group of potentials - cultural and recreational offer has an average value of 2.1 points, of which the highest value has the Polog region with 3.2 points, followed by the southwest region with 2.7 points, and the lowest value have the Vardar and northeast region with 1, 5 points. In the other five regions, the average values range from 1.8 to 2.4 points. This group of potentials has opportunities to enrich with new content that will be a motive plus for the development of religious-monastery tourism.

The group of potentials - communication with the public has an average value of 1.7 points, of which the highest value has the Polog region with 3.2 points, followed by the Pelagonija region with 2.1 points, and the lowest value has the Vardar and southeast region with only 1, 0 points In the other four regions, the average values range from 1.3 to 1.8 points. These data show that almost all regions have poor communication with the public. This is a result of poor communication of the monastic monasteries with the public - tourists / visitors. This group of potentials will have to work harder if the active monasteries want to develop religious tourism. The group of potentials - economy and production has an average value of 2.5 points, of which the highest value has the Vardar region with high 3.1 points, followed by the Skopje region with 2.9 points, and the lowest value has the northeastern region with 1.5 points. In the other five regions, the average values range from 1.9 to 2.8 points. In this group of potentials, too, there is sufficient space for the advancement of the economy and production. These potentials are conditioned by the number of monks / nuns, but also by the weak economic cooperation with the local population and joint production, which directly affect the development of religious and rural tourism.

The group of potentials - current conditions of the monastery has an average value of 3.6 points, of which the highest value has the Polog region with a high 4.5 points, followed by the southwestern region with 4.1 points, and the lowest southeastern region with 3.1 points. In the other five regions, the average values range from 3.2 to 3.7 points. This group of potentials is present in all active monasteries with a tendency to increase with contents in the direction of actualization of the monasteries.

The total average in index points as a whole for all regions is 2.7, which indicates a free space for tourism development in the country as a whole. In this aggregate average, the highest numerical values have the Polog region with 3.8 points, then the southwestern region with 2.8 points, Vardar region with 2.7 points, Pelagonija region with 2.6 points, three regions - east, northeast and Skopje have value of 2.5 points, and the southeastern region has the lowest numerical values of 2.4 points.

Summarized from Table 4, according to the group of potentials, all planning regions have enough space to promote religious, ie monastery tourism.

Tables 4. Group of potentials for tourist evaluation of the planning regions

Group of potentials	PLANNING REGIONS (number of active monasteries) Value of numerical points								
	Vardar planning region (2)	East Planning Region (7)	Southwest Planning Region (8)	Southeast Planning Region (6)	Pelagonia planning region (8)	Polog planning region (2)	Northeast Planning Region (2)	Skopje planning region (5)	Average
Access and infrastructure	4,5	3,9	4,5	4,1	4,1	4,8	4,5	3,9	**4,3**
Accommodation and catering	2,7	2,0	1,9	1,4	1,5	4,7	2,7	1,5	**2,3**
Cultural and recreational offer	1,5	1,8	2,7	2,4	1,8	3,2	1,5	2,2	**2,1**
Communication with the public	1,0	1,3	1,8	1,0	2,1	3,2	1,5	1,7	**1,7**
Economy and production	3,1	2,5	1,9	2,5	2,8	2,8	1,5	2,9	**2,5**
Current conditions of the monastery	3,5	3,5	4,1	3,1	3,3	4,5	3,7	3,2	**3,6**
Average in index points	**2,7**	**2,5**	**2,8**	**2,4**	**2,6**	**3,8**	**2,5**	**2,5**	**2,7**

For a better geographical overview, the location of the active monasteries by planning regions are shown in Figures 1.
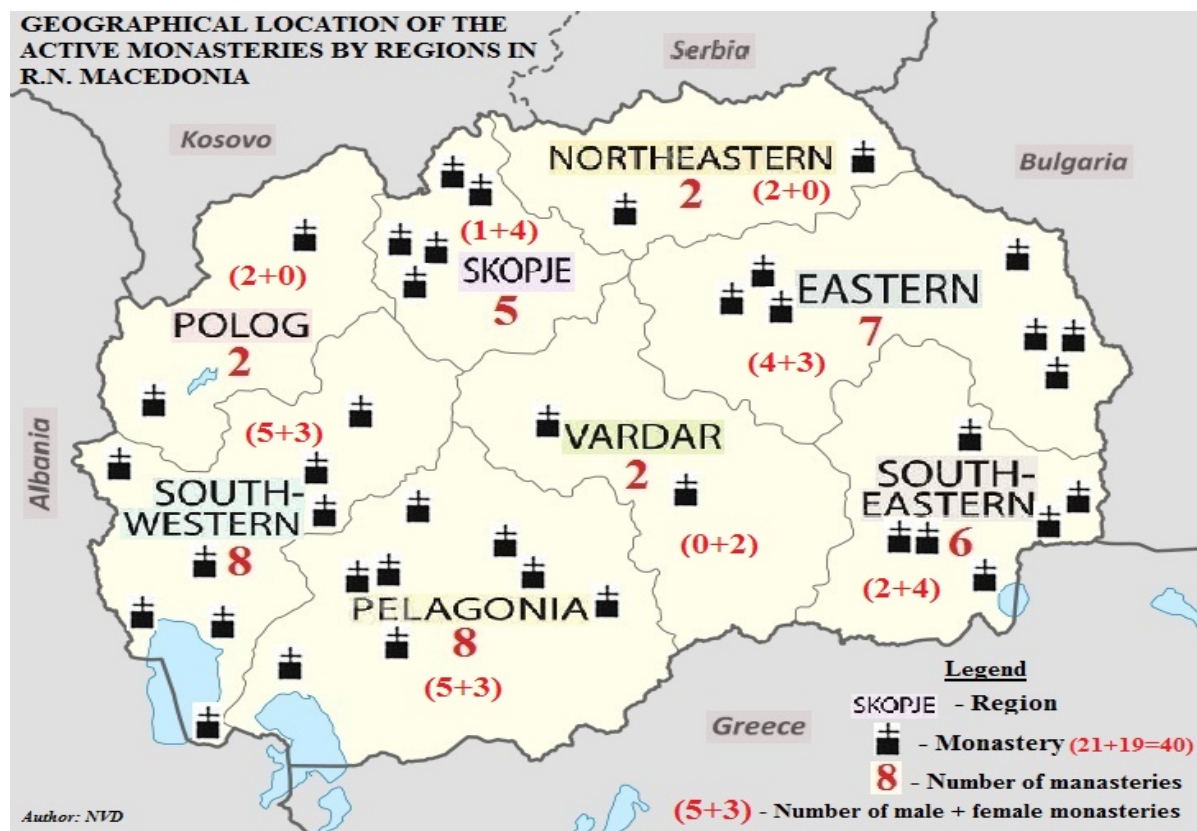
Figures 1. Geographical location of the active monasteries by regions in RN Macedonia

Conclusion

From the above we can draw a conclusion in which there are recommendations. From the research for tourist valorization of the 40 active monasteries in function of the religious tourism in RS. Macedonia, we single out the following.

- In all regions there are active monasteries with monasticism, but with an insufficient number of monks / nuns;

- Practicing religious - monastic tourism in most of the monasteries requires construction of new lodgings, or adaptation of the existing lodgings with rooms with complete infrastructure for tourists / visitors;

- For the promotion of the monastery tourism, new contents are needed, continuous promotion, communication with the public, investing in a profitable and sustainable economy of the monasteries;

- It is recommended that monasticism acquire basic education for practicing monastic or religious tourism;

- In the development of the monastery - religious tourism should play a significant role relevant institutions (religious, educational, cultural, economic, tourist, etc.), communication with the local population (rural, urban) and the establishment of mutual partnership and cooperation (monastery - local community, etc.);

- The potentials for religious tourism are great, but they are not used enough, so we recommend the development of a Strategy for the development of monastery tourism.

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6. Field research, realized in the summer months in 2020 and 2021.

TRENDS AND CHALLENGES FOR STRATEGIC HUMAN RESOURCES MANAGEMENT IN 21ST CENTURY

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Abstract
The intention behind writing this paper was to explore and show the role of managers in one of the most important activities in the organization, human resource management and trends and challenges they face in the 21st century. This paper also presents the Covid-19 crisis and the impact on human resources managers. Scientific methods of analysis, synthesis and description were used in this paper.
Key words: *Modern trends and challenges, Covid-19, HR Managers, strategy, performance.*

Introduction and literature review
Today, it is impossible to imagine an effective manager who does not sovereignly manage issues that treat strategic management. Strategic management is a complex term that refers to a group of people in an organization, the managerial process, and a scientific discipline. As a group of people in an organization, strategic management refers to those managers who are responsible for selecting, defining, implementing, and controlling strategic decisions. As a process, strategic management implies a continuous process aimed at creating the organization's readiness for adaptation in today's highly changing environment. Strategic management as a scientific discipline implies systematized knowledge related to environmental analysis, setting organizational direction, formulating and implementing organizational direction, formulating and implementing organizational strategy and implementing strategic control and evaluation *(Buble et al., 2005).* Strategic management helps the organization to improve competitive advantage and focus on success, with the prerequisite to choose a core strategy, and a strategy for functional areas of the organization *(Gutić, Rudelj, 2012).* According to *Wyss:* "The model of leadership is not as important as the man of flesh and blood, who is behind it all." So, models are not such a force that moves things and people, but personalities who lead. Some authors by human resources mean the total used and latent spiritual and physical potential of employees in one company *(T. Laukmann)*, while others mean the same by the term staff. *(J. Brekić, D. Kavran, P. Drucker et al.)* Treating people in the process of working as a resource makes the process of human resource management very complex. Precisely because of that, "all activities related to the affirmation of the activities and development of human resources in the organization represent a continuous, interconnecting flow around which other managerial activities take place." *(Branislav Đorđević, 2003, p. 528)* Therefore, human resource management is focused primarily on the needs of companies for human resources in terms of their acquisition, deployment, development, promotion, control, motivation and the like. The way in which human resources are managed becomes a decisive factor in the competitiveness, development and survival of a company.

Environment and prerequisites for human resource management

The environment in which human resources management takes place is important. Depending on the environment in which employees work, they achieve business results. A positive and motivating environment has a stimulating effect on employees. If the employees in the organization work in an enthusiastic, dynamic, creative and learning climate, they themselves will be more motivated for their own development and contribution to the organization. "Continuous improvement, quality, innovation and initiative is a natural behavior of motivated employees" *(Kamp, 2000: 175). Creating a positive environment for human resources includes:*

♣ linking the human resources system with the business goals of the company - that is, strategic human resources management,

♣ ensuring compliance of the human resources system with federal, state and local laws,

♣ designing a business that, in addition to motivating and satisfying employees, also maximizes customer service, quality, and productivity *"(Noe, Hollenbeck, Gerhart, & Wright, 2006, p.32).*

♣ Before starting the implementation of human resource management in the organization, it is necessary to make an effective analysis of the work. The analysis of work in the organization provides insight into the responsibilities of each employee and the workplace where the employee is. *Požega (2012)* points out that job analysis includes "analysis of each employee and his job, and in order to determine whether the employee has an optimal, excessive or too small amount of work, strictly quantitatively considering the number of jobs and tasks performed daily, as well as whether his workplace corresponds to his knowledge, abilities and skills."

The roles of human resources managers
Standard roles

Management of human potential represents a process of deprivation, engagement, training, motivation, recruitment and conservation of prisoners, as well as the creation of a secure and legal environment for the conservation of any foreign party, or other organization. It is the right organization that will continue to support its strategic position, which will deprive it, reduce its quality and keep it motivated, and motivate them to do the best they can. The key to managing human potential is the ability to create organizations that can help people. Nowadays, the term human resource management has four meanings: scientific discipline, managerial function, special business function in the organization, specific philosophy of management. *(Bahtijarević-Šiber, F., Pološki Vokić, N., Sikavica, 2008: p.595).*

The role of the manager is manifested in caring for the optimal use of available resources and delegating tasks. He takes care of the final output and the roles of all employees in the organization and keeps documentation and controls all of this. In modern times, managers are becoming increasingly aware of the importance of the art of working with people, and thus realize the crucial importance of the following skills:

♣ selection, training and qualification of employees;
♣ designing and conducting meetings of all kinds;
♣ conflict management;
♣ influence and negotiation on an equal basis;
♣ integrating the efforts of people of different professional specialties.

Figure 1: Human Resources Management Goals

ORGANIZATIONAL GOALS
maximum realization of the organization's profit,
increase productivity,
HUMAN RESOURCES MANAGEMENT
meeting the needs of employees;
improving the social and economic situation;
ensuring acceptable working conditions and quality of working life;
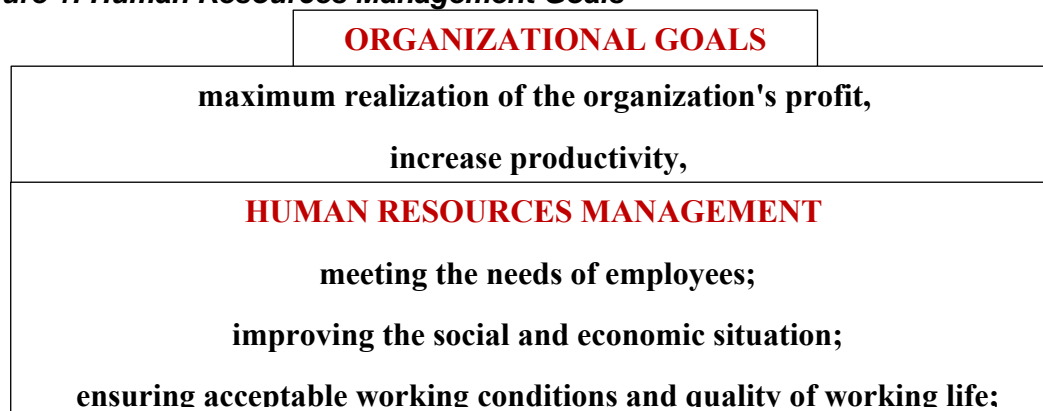
Source: Authors work according to: Jambrek, I.; Ivica Penić, I. (2008.): „Upravljanje ljudskim potencijalima u poduzećima: Ljudski faktor, motivacija zaposlenika kao najbitniji čimbenici uspješnosti poslovanja poduzeća", Zbornik Pravnog fakultete Sveučilišta u Rijeci (1991.), vol. 29, br. 2, str. 1181.-1206.

Human resources management is an element of the management function that is the responsibility of top-level management. In this context, the objectives of this process should be compatible with the overall organizational objectives. It is concluded that human resources management has a strategic and developmental character and is long-term oriented. Therefore, the tasks and activities of this process are characterized by dynamism and interconnectedness, as well as the relationship with other business processes, which implies the need for continuous reflection on the goals of the organization and linking to purposeful activities. The mere fact that a company has certain human resources does not guarantee the company's business success, which can be achieved through proper management, development, control and motivation of employees. (Fig.1) *(Tadić, I., 2014) New tasks and challenges* of human resources management tell us that standard tasks are being upgraded, so the human resources manager must be an agent of change, lead people to business success, innovate, connect differences, motivate, communicate, and many other tasks, and due to changes in the environment.

New roles
Today, human resources managers are less and less engaged in administrative tasks, which are more and more automated or even separated, and standard activities are performed more efficiently with the help of information and communication technologies, with a proactive role of employees. Thus, the human resources manager has a much more important and complex role in a modern organization, he becomes an employee representative, develops human capital, becomes an expert in human resources management, strategic management partner, but also a human resources leader *(Bahtijarević-Šiber, 2014).*

Figure 2: Modern roles of managers

CREATOR OF WORK SUCCESS	INNOVATOR	MAIN INTEGRATOR	KING OF PRODUCTIVITY
DIVERSITY MANAGER	ADVOCATE OF HUMAN POTENTIAL	MAIN SUCCESS MANAGER	CHANGE AGENT
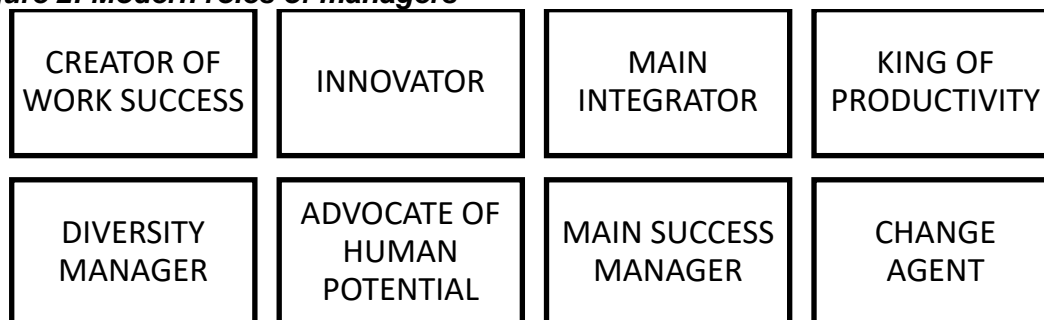
Source: Authors work according to Bahtijarević-Šiber, 2014: 24)

Standard tasks of strategic human resource management can be divided into four categories:
♣ securing human resources
♣ education and human resources development
♣ motivating and rewarding human resources
♣ maintenance of human resources *(Bahtijarević-Šiber, 2014: 23).*

However, the new tasks and challenges of human resource management tell us that standard tasks are being upgraded, so the human resources manager must be an agent of change, lead people to business success, innovate, combine diversity, motivate, communicate, among many other tasks in the organization of the environment. *(Fig.2)* Managers are involved in making decisions related to job creation, finding adequate employees, managing and collaborating in teams, managing employee careers, motivating and educating employees and much more. Through performing tasks related to human resources management, managers want to achieve economic goals set by the organization, social goals related to interpersonal relationships in the organization and train employees to change.(Fig.3) The task that managers in charge of human resources management are not easy and requires managers to have different skills and knowledge. "There are, of course, different leadership and management styles that a human resources manager can apply, and each of them on average has greater or lesser success in working and interacting with hierarchically subordinate employees" (Požega, 2012: 212). Human resources managers have to work for years on their own training and invest in their own development. This is the only way they will be able to manage other people and help the organization achieve its goals. Every manager must understand the importance of human resources management be able to successfully manage human resources and avoid problems that may occur when hiring an inadequate person in the organization. In addition to avoiding problems, it will help managers to achieve successful results with other employees in the organization.

Figure 3. Human resource management practices

➢ **HUMAN RESOURCES PLANNING**
➢ **ACQUISITION**
➢ **SELECTION**
➢ **TRAINING AND DEVELOPMENT**
➢ **AWARDING**
➢ **SUCCESS MANAGEMENT**
➢ **EMPLOYEE RELATIONS**
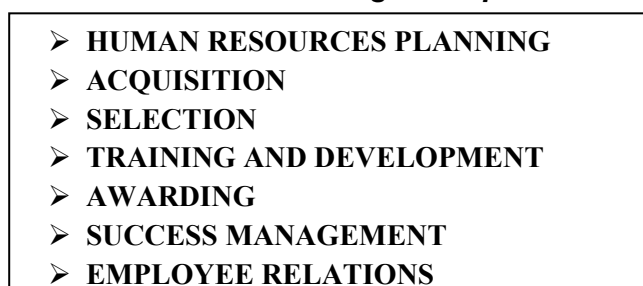
= COMPANY SUCCESS

Source: Authors work according to Noe, Hollenbeck, Gerhart i Wright, 2006:04

Defining and designing a management strategy

Human resource management is present in the strategic considerations of the organization, as a key element of business strategy. Thus, the human resources manager becomes a strategist and visionary, thinking outside the box while looking at the overall picture of the organization. At the same time, the administrative role of the human resources manager is still present and he must skillfully balance between these roles *(Obradović et al., 2015).* There is a high two-way connection between different business strategies and hAn innovation strategy requires people to work differently: Human resources management and it can be viewed as follows:

- ♣ A quality improvement strategy requires people who work smarter and better.
- ♣ Cost reduction strategy requires people who work harder (Bahtijerević-Šiber, 1999: 162).

The basic elements of the business strategy formulation process are also applicable to the planning of the human resources management strategy. *The following is required for the development and successful implementation of the strategic ability of human resources managers:*

1. Identify the key strategic issues of the area - how to achieve a sustainable competitive advantage by developing and maintaining human resources, at reasonable cost.
2. Recognize the essential knowledge, skills and abilities of the people in the organization and what they are best at.
3. Identify other important success factors of the organization, areas in which the organization should be successful due to its human resources.
4. Recognize medium-term and long-term priorities of human resources development in the organization.
5. Recognize the strengths and weaknesses of human resources in the organization, ie what are the dangers associated with human resources, and what opportunities are provided to them.
6. Conduct a strategic review of long-term problems faced by human resources management in the organization, in accordance with previous knowledge.
7. Analyze all major processes and activities, and key tasks for which the HR manager is responsible, in order to determine the actions that need to be taken to improve long-term performance.
8. Ensure that the development of human resources of the organization in the future is in line with the overall business strategy and related functions.
9. Defining personal long-term priorities of human resources managers in the organization.
10. Determining how human resources will be addressed in the context of the most important issues: what needs to be done, why something needs to be done (in relation to the business situation), how something needs to be done, who will do it and finally, when it needs to be done *(Armstrong , 2003: 84 - book two).*

Modern trends and challenges of human resources management

Human resource management, especially the strategic one, is an extremely complex and demanding managerial function, with multiple roles, tasks and goals. Today, the organization expects from all its managers, including human resources managers, high success in balancing between all responsibilities and activities, and at the same time to connect capable and interested employees with the business needs of the organization. Combining all these

tasks, human resource managers are expected to make a significant contribution to organizational competitiveness and performance. This means that the human resources manager must successfully respond not only to managerial requirements, but also to the requirements of all other stakeholders inside and outside the organization, primarily employees, unions, shareholders (depending on the form of organization), government and others. In addition, it should be added that success in human resource management is influenced by situational factors such as employee profile, business strategy, available information and communication technology, labor resources, management philosophy, but also the labor market situation, union requirements and legal frameworks.

The modern era began around the 1980s, and marked a whole new era in the international economy, modern society and way of life. Changes driven by globalization and the emergence and dizzying development of information technology have led to knowledge and information becoming the most important resource today. Human resource management now has a strategic dimension, and its concept includes techniques, processes and tools used to emphasize the importance of man in modern organization. In the current situation, the key factor for the success of every company is human resources and human resources management. The very concept of human resources management means a paradigm shift in the content of work and the way of organizing the human resources function in a modern company. The modern enterprise is exposed to various challenges. (*Goić, S., 1998, p.120*) Companies now need to focus their business and management more rationally and act quickly and efficiently. Business performance and human resource management are influenced by various modern trends. They include globalization, technological trends, trends in the nature of the work of demographic change. *(Dessler, G., 2015, p.37) Changes that occur in the environment of the organization* are inevitable and affect all areas of business, and the management of human resources has been affected by the following changes:

1.Change of economic paradigm and conception; creating values dominated by intangible resources - knowledge, ideas and creativity, human resources and intellectual capital have changed the approach to human resource management and changed the philosophy and orientation of its management to soft elements of organizational performance, primarily human resources. They are becoming an increasing part of the organization's assets, making the role of human management strategic.

2.Globalization*;* the labor market is becoming global, competition and the struggle for talent is intensifying, which requires new skills and competencies from human resources management, such as the development of global leaders and managers, knowledge of different cultures, successful management of international human resources and more.

3.Technology development*;* in particular, the development of information and communication technology has a strong impact on human resource management as advanced technologies require knowledge workers and they increasingly dominate; information and communication technology itself has changed the work of human resources managers and simplified the performance of standard activities, which has opened the space for dealing with change and strategic activities

4.Demographic changes in the world*;* face human resources management with a lack of quality people and talents for their development needs, there are aging trends, changing generations of different value systems, but also with the growing diversity of human resources that require a different approach and management *(Bahtijarević Šiber, 2014).*

The standard tasks of strategic human resource management are related to securing, educating and developing, motivating, rewarding and maintaining human resources, and they are ongoing. However, the changes taking place in the environment of the organization also affect the area of human resources, and pose new challenges to their managers. Here we will

list some of the *newer and more challenging tasks and roles that human resources managers find themselves in:*

1.New forms of employee motivation. Motivation stands out as one of the standard tasks of management, ie human resources managers. Motivating employees is a pervasive challenge, something that managers face today on an ongoing basis, and which directs employees toward desirable behaviors within the organization. Every organization needs educated and highly motivated employees to maintain long-term business success, and employee motivation is a factor in human resource management and a key indicator of organizational success. People are the capital that management takes care of, led by human resources managers. Managers must therefore understand the complexity of people and their personalities and, in addition to knowing motivational theories, must know and apply the same, depending on the specific circumstances in which the organization finds itself. The manager must know when and how to select and apply tangible or intangible forms of motivation or a combination thereof. Material motivation, such as money, awards, recognitions, etc., is present in almost every organization that tries to keep the best, but the difference today is made by those intangible sources of motivation. How to encourage employees to belong to the organization, achieve common goals, responsibilities and accept the challenges of work, it makes a difference and a successful human resources manager, because the degree of motivation varies from employee to employee and for this reason the emphasis is on the responsibilities of human resources managers. who must know and be able to recognize it *(Želježić, 2019).*

2.Communication in the organization. As already mentioned, a human resources manager must have strong interpersonal skills, because he works with people and "on people", he must know how to communicate well. Although there are external and internal communication, the importance of internal communication in the organization is discussed here. As there is internal, formal and informal communication in every organization, the human resources manager must "hear" everything and skillfully manage the information that circulates, and management must not neglect the benefits of good communication with employees. Informal communication is a complex system, which has no standardized behavior and is difficult to influence directly, but it is still possible with good formal internal communication. In contrast, formal internal communication in the organization offers pre-agreed forms of behavior and implementation of communication processes. For formal internal communication to be successful, it must be led by departments or human resources manager, and its success is possible only if the communication is two-way (management-employees, employees-management), and when the obligation to provide feedback is respected. Every organization, or its management, wants to achieve successful communication, so the development of communication skills and relationships with people has become an integral part of organizational development and part of organizational learning. The human resources management system seeks to control the communication process and shape it according to the needs of the organization. Behavior and behavior towards employees can be an aggravating or mitigating factor in the organization, but good organizational behavior techniques can bring success in improving and managing communication in the organization, all of which, along with encouraging and motivating employees, ensures greater employee efficiency. Good communication within the organization will give a good atmosphere and thus will make employees more satisfied *(Garača, Kadlec, 2011).*

3.A learning organization. The notion of a learning organization has already been mentioned. In today's economically and politically very challenging times, in order to survive, organizations must "constantly learn, innovate and renew" - be a learning organization. The learning organization can be defined in various ways, but the most important thing is to

emphasize the learning of the organization as a whole, and not just some parts of it or individuals. Thus, it can be said that a learning organization is one that constantly and purposefully develops its members and constantly transforms itself. Or, a learning organization is one in which employees and managers absorb good ideas from anyone and anywhere. In short, the concept of a learning organization implies continuous learning of all its members, at all levels of the organization, developing employee skills and developing the organization as a whole, but also learning how to learn *(Sikavica, 2011: 795-796).* These processes are also led by human resources managers, because organizations must adapt, constantly learn and renew themselves in order to survive in today's business conditions. The condition for this is adaptation to the dynamic conditions in which organizations find themselves today, which can only be achieved in those organizations that are willing to learn. Learning must be available to every employee in the organization, because it enables the mastery of key competencies that achieve business excellence, so the role of human resources managers is to directly help and encourage all employees in the organization to be educated. It is important to emphasize that organizational learning is broader and more complex than individual learning, the difference is that an individual does not keep some knowledge acquired through organizational learning for himself, but applies it for the benefit of his organization. Organizational knowledge becomes the property of the entire organization, and the role of the learning organization is to incorporate the knowledge and learning of individuals into the knowledge of the organization as a whole. However, in the case of an individual leaving the organization, his knowledge goes with him. It is extremely important to keep quality people in the organization, which is an extremely demanding task of human resources management. In addition to various forms of motivation, this is achieved by enabling different models of learning and formal and informal forms of employee education in the organization. Employees can also learn through various trainings and educations, through team learning, but also "at the desk", ie rotations of employees from one job to another *(Bahtijarević-Šiber, Sikavica, Pološki Vokić, 2008).*

4.Human resource diversity management*.* Working in local, but especially in international teams presents a number of challenges, one of which is the most significant employee turnover. In order to reduce employee turnover, it is important to have good, strategic human resource planning for work in both environments, and successful management in the sense that you need to plan well the activities that the organization will take to reduce this problem. Human resources managers strive to achieve this by analyzing and predicting turnover, realistic job descriptions, improved selection procedures, job enrichment, various trainings, giving opportunities for growth, advancement and rewards, transparent system of salaries and benefits, trainings for managers and other procedures *(Bahtijarević -Shiber, 1999).* As business in the modern world is marked by the development of information, capital, products, services and people, it encourages the erasure of boundaries in business, ie doing business globally. In addition, the development of the Internet and advanced information and communication technologies, making information immediately available to all, gives the opportunity to get involved in business processes taking place in different parts of the world. This contributes to an increase in the volume of trade in goods, capital and services, and world markets are growing. All this creates the conditions for new opportunities and investments, for access to new technologies, but also access to new markets for labor, capital and raw materials, which affects organizational productivity and performance. In these dynamic conditions, which are changing the business environment, management is facing new challenges, which in turn focus on a new, modern manager, whose skills now range from general conceptual and technical knowledge, through interpersonal and communication skills, to specific change management skills. One of the biggest challenges of the organization's business in the global market is the management of people, ie business teams composed of

members of different cultures, worldviews and even religions, where diversity management is one of the biggest challenges of modern human resource management. Given that human resources are considered the main competitive force in international business, human resources management must invest additional efforts in attracting, hiring and retaining culturally diverse employees, and managing these differences. In practice, this means that obtaining human resources for international business refers to recognizing individuals who know foreign languages, are willing to work and live abroad, or today more present work from home, in international teams. Therefore, organizations and their human resources departments are also developing special training programs for managers and employees of international teams *(Bedeković, Golub, 2011)*.

5.Business ethics and socially responsible business. The challenges of modern management are also met with business and managerial ethics, due to the growing need and demand of the public for social responsibility of the organization. All this requires a different behavior of business organizations, because in addition to economic criteria, it insists on the inclusion of ethical criteria in assessing the effects of business decisions. Organizational ethics includes values, rules, and beliefs that determine the way managers and employees should behave when faced with the fact that their actions may help or harm people inside or outside the organization. Due to changes in the organization due to globalization, ethical leadership and the presence of ethical managers are becoming increasingly important, which is especially important because today's trends show that more and more employees work independently, outside the organization and without direct control. As the values of the organization are what holds them all together, the leadership, ie managers, must be the leaders in respecting the values of the organization. The human resources manager is expected to be the main communicator, to work on the development and promotion of the organization's values. Also, they are expected to select and hire ethical people through the recruitment and selection process, especially when hiring candidates for managerial positions. It is easier to ensure ethical behavior in an organization if it employs people with such desirable principles. After the selection, in the recruitment process, the selected candidates should be informed that their principles and ethics were crucial for their recruitment. Also, HR managers themselves must be an example and represent this desirable pattern of behavior, because employees pay more attention to what managers do than what they say, so managers must be careful what message they send with their behavior. Human resource managers must act ethically towards everyone, employees, overall management, partners and potential candidates, especially if they are not ultimately selected for employment. Managerial and business ethics is important and complex, so it is extremely important to constantly invest organizational resources in its development and implementation *(Bahtijarević-Šiber et al., 2008).* Consequently, socially responsible business becomes an imperative for every organization and is extremely important for business activities. Management is required to conduct business in a socially responsible manner, to act in a way that represents not only the economic interests of the organization, but also for the benefit of society as a whole. Here, the human resources manager has an important role to play, to encourage a positive and proactive approach to socially responsible business of the organization, not only its managers, but all employees. All of them should be encouraged to take actions that will benefit both the environment and the organization, anticipating the needs of the environment through actions to increase the quality of life of all people, through concepts of environmental management and sustainable development, and through promoting ethical norms not only in the organization but in society. This task is not easy, because the entire management of the organization, which includes human resources management, must harmonize the interests of the organization with the interests of its internal and external environment, but also society as a whole *(Ibid., 2008)*.

6.Crisis management and risk management. Crises are sudden and unpredictable events that strongly affect the organization and that are often possible and partially predictable. The causes of the crisis can be human actions, natural disasters, but also health threats, such as the current global crisis, a pandemic caused by the outbreak of *COVID-19*. Crisis situations can be caused by people, knowingly harming the organization or when their actions from the outside confront the organization with great threats. In order to resolve crisis situations, it is necessary to first try to anticipate potential problems and crises, and it is necessary to create crisis resolution plans, crisis communication plan and form a crisis management team consisting of senior and multi-level managers, including human resources. but employees should definitely be included. Crisis management is the process of resolving a tense situation by planning, organizing, directing and supervising a number of mutually harmonized procedures, and leading the decision-making process, to quickly, not hastily, solve the problems faced by the organization. In crisis management, the most important thing is to stay calm and make the environment believe that the organization and its managers are managing the crisis *(Armstrong, 2003)* Risk management and assessment is an integral part of good management, managers are constantly looking for the most useful processes and guidelines for risk management and very often face a difficult task, which is what approach to crisis management to recommend to the organization's management. Therefore, the management structure in the organization should ensure that all risks have "owners" who are responsible for managing them and who are consequently empowered to make decisions related to managing those risks (*Funda, 2019*). Risks can be various, market-oriented, property, personnel and consumer-oriented risks. In the context of human resources management, his attention is focused on human resources, ie human resources risks, which may arise, for example, due to the loss of key employees, competition from former employees or due to dishonesty and unprofessional behavior of employees. Therefore, these managers are also "risk owners" of human resources and must be trained to identify, measure and manage human resources risks. They must be able to recognize changes in the behavior and habits of key people, changes in the attitudes of employees in their behavior towards the organization, lack of loyalty. They must be able to identify situations in which recurring problems in the work of employees that were supposed to be solved, and especially situations in which the human resources of the organization are insufficiently or inadequately used by their competent managers *(Ibid., 2019).* All managers, including human resources managers in crisis management, must be determined, react quickly or speed up collective decision-making. In doing so, they must not miss all the important steps that are the standard for solving problems or making decisions in a crisis, such as describing the situation, setting goals, setting assumptions, collecting and analyzing facts, considering possible courses of action, evaluating and choosing the best solutions. and implementing these solutions, and monitoring performance. Effective crisis managers go through these procedures quickly together with their teams, control the situation well and lead to crisis resolution (*Armstrong, 2003*).

7.Measuring the performance of human resource management. Measuring the success of human resources management in the last 20 years has become more than relevant, and follows the very development of human resources management. The need to measure performance is thought to have arisen because of a comparison of how cost-effective management collaborative management is than autocratic-style management. Although, representations that measure only financial effects are not the most suitable for measuring human resource management, a model needs to be found that will show not only nature but also its real contribution. Despite the number of measures and indicators of human resource management success and its role, there is still a deep gap between the awareness of the importance of human resources for business strategy, competitive advantage and contribution to organizational success *(Bahtijarević-Šiber, 2014).* performance can also, under certain

conditions, be the cause of economic decline and alienation of employees. Poor and of poor quality, it can often be a major obstacle to organizational success. An inadequate way of measuring its performance can also contribute to this, which does not speak of its contribution to the achievement of organizational goals and strategies, nor where changes and investments are necessary and to what extent. Therefore, measuring success is one of the biggest problems and challenges of modern human resource management and requires a new approach and analytics, focused on the real problems and indicators of success. Instead of many different indicators, financial and non-financial, it is necessary to focus on several key and valid indicators that must become an integral part of the measurement system and indicators necessary for quality business decision-making. *(Ibid., 2014)*

**COVID-19 challenges for strategic human resources managers**

For a business to be successful, every company is obligated to enhance their workforce by aligning their human resource strategies with the latest trends. The global COVID 19 pandemic has compelled HR professionals to swiftly respond to critical business priorities, handle fluctuations in the workforce, and harness the latest technologies. this pandemic has obviously led to the emergence of a complex and challenging environment for managers and human resource management practitioners who needed to find ingenious solutions to sustain their company's business and to help their employees to cope with the challenges of this unprecedented situation. HRM 'is about how people are employed, managed and developed in organizations' (*Armstrong & Taylor, , 2020: 3)*. It has been grandly impacted by COVID-19, generating significant challenges for managers and HRM practitioners. This impact and these challenges are explored in this section, in relation to strategic HRM and working conditions, as well as HRM functions, specifically, staffing, performance management, training and development, compensation management, safety and health management, and employees' relations. Strategic HRM refers to the vertical connection between HRM functions and the organizational strategy as well as the horizontal consistency between HRM functions (*Wright & McMahan, 1992)*. Its main purpose is to effectively utilize the human resources to serve the strategic needs of the organization *(Chapman, et al., 2018)* In order to ensure the achievement of the organizational goals in a time of crisis, strategic agility is required *(Liu, Lee, & Lee, 2020)*. Organizations need to be able to prepare and allocate their resources; to coordinate the needed mechanism; and to properly use the organizational resources and knowledge. In this context, the novelty and the complexity of the COVID-19 represent a significant challenge that might compromise the achievement of organizational goals. Performing strategic planning or implementing the initial one can be challenging for managers and HRM practitioners.

Working conditions represent 'the core of paid work and employment relationships' *(ILO, 2020)*. They 'cover a broad range of topics and issues, from working time (hours of work, rest periods, and work schedules) to remuneration, as well as the physical conditions and mental demands that exist in the workplace' *(ILO, 2020)*. The COVID-19 crisis has drastically altered working conditions in organizations. Indeed, to ensure their business continuity, most organizations have moved to remote working, and requiring their employees to work from home. *(Aitken-Fox et al., 2020)* Laying off employees is not an easy decision for organizations, but it might be inevitable in times of crisis such as COVID-19. Actually, all over the world, no one knows when this pandemic will end and if its consequences on organizations will be temporary or permanent *(Bartik et al., 2020)*. On the contrary, organizations that have expanded their business during the pandemic have faced other types of staffing challenges. Many of them have opted out for more flexible employment relationships and subcontracted work, such as temporary agency work, freelancers, and the gig economy (Spurk & Straub, Reference Spurk and Straub2020), due to uncertainty generated by COVID-19. Indeed, these organizations have increased their recruitment *(Akkermans, et al., 2020)* HRM practitioners were not prepared for this type of unexpected change. Moreover, virtual selection methods

might affect the ability of potential employees and employers to assess person–environment fit, which can have a negative impact on employees' productivity and retention *(Carnevale & Hatak, 2020).* Besides, the temporary character of flexible employment relationship posed the challenge of employees' retention, employee retention might represent another major challenge for organizations in the current context of this pandemic (*Elsafty & Ragheb, 2020; Ngoc Su et al., 2021).*

Staffing refers to ' the process of attracting, selecting, and retaining competent individuals to achieve organizational goals' *(Ployhart, 2006: 868).* It had been greatly impacted by COVID-19, which has reshaped its dynamic in organizations *(Campello, et al., 2020).* In this context, organizations that were facing financial difficulties due to this pandemic have adopted downskilling by cutting back on recruitment of high-skill jobs more than low-skill jobs, to reduce their costs and try to sustain their business *(Campello, et al., 2020);* they have frozen or cut back all their recruitment; or they have laid off their employees. Indeed, millions of people found themselves unemployed due to the COVID-19 outbreak. (*Blustein et al 2020).* The main challenge of HRM practitioners, in this case, is to support managers and employees during this process and to offer proper information. However, it might not be easy in the context of uncertainty. Actually, all over the world, no one knows when this pandemic will end and if its consequences on organizations will be temporary or permanent *(Bartik et al., 2020).*

Figure 4: Unemployment by Country 2022

Source: https://worldpopulationreview.com/country-rankings/unemployment-by-country
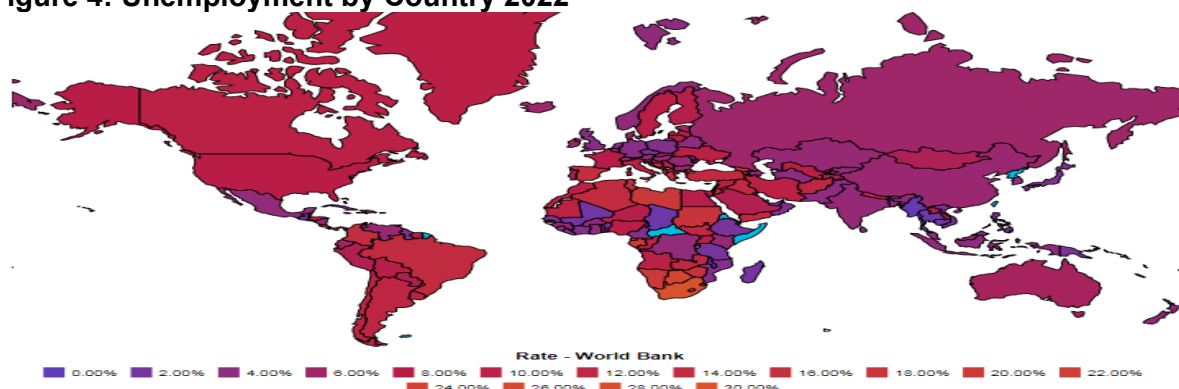
The unemployment rate is defined as the percentage of unemployed workers in the total labor force. The unemployment rate includes workers who currently do not work, although they can do so. For 2021, the global unemployment rate is estimated to be between 6.3-6.5%, depending upon the source. The unemployment rate is a lagging indicator, meaning it responds (rises and falls) to changing economic conditions rather than influencing or predicting them. When the economy grows at a healthy rate, the job market is plentiful and the unemployment rate drops. When the economy is experiencing a recession or other turbulence, the job market tends to retract and the unemployment rate rises in response. (Fig.4)

Performance management is 'a continuous process of identifying, measuring, and developing the performance of individuals and workgroups and aligning performance with the strategic goals of the organization' *(Aguinis, 2019: 8).* It is crucial to ensure that employees' performance is aligned with the company's strategic goals (*Ismail & Gali, 2017*). To sustain the company amid a crisis like COVID-19, employees are still required to maintain their good performance (*Sembiring, et al., 2020*). measuring employees' performance during this crisis

can be challenging, considering the modification of the working conditions. Furthermore, there are many factors related to the COVID-19 outbreak that may influence employees' performance. In this context, the study by Prasad and Vaidya reported that workplace isolation, lack of communication, family distractions, role overload, and occupational stress factors (role ambiguity, role conflict, career, and job-control), which have emerged due to COVID-19, mainly among employees working from home are significant predictors of employees' performance. Furthermore, employees' performance during remote working is also dependent on managers' understanding of how and what is required to manage a remote team (*Aitken-Fox et al., 2020).*

Training plays an important role in a period of crisis, such as pandemics *(Devyania, et al., 2020*) to increase the COVID-19 awareness, to reduce the risk of the virus spread, and to prevent mental health issues (*Quaedackers et al., 2020).* It also helps to support employees in the process of transition toward remote working. In this case, the main challenge for HRM practitioners might be related to the development of a training program adapted to the new reality of the organization and the employees and to choose the proper training methods, considering physical distancing measures coupled with the necessity to have employees quickly operational to sustain the company business. This suggests that managers and HRM practitioners need to go beyond the traditional training methods. Devyania et al. recommended, in this case, to change employees' training programs in a way that ensures a long-term transition toward the new working practices. The success of remote working is also dependent on managers' understanding of the virtual supervision of employees (*Aitken-Fox et al., 2020b).* In this context, the HRM practitioners should play a strategic role by supporting and training these managers on how to manage a virtual team, to help them to overcome these difficulties and to cope with remote working challenges in order to be able to support their team members (*Hamouche, 2020).* Besides training, COVID-19 has posed significant challenges related to ***career development*** in organizations. According to some authors, COVID-19 has led to a grand career shock *(Akkermans et al., 2020)*

Compensation management refers to the intrinsic and extrinsic rewards that employees receive for performing their job. It encompasses monetary (base pay/bonuses) and non-monetary rewards (employee benefits) (*Martocchio, 2017).* Compensation can influence employees' motivation and performance (*Safuan & Kurnia, 2021).*

Safety and Health management. Employers are responsible for the protection of their employees while they are working. They must ensure that the workplace is free from any hazard that may psychologically or physically harm them or cause their death. COVID-19 has generated a new workplace hazard *(Hecker, 2020)* that represents a significant source of stress for employees and a significant challenge for managers and HRM practitioners *(Hamouche, 2020).* The impact on employees' health varies based on the working environment and the employee's occupational role *(Brooks, et al., 2018*). Two main challenges can be identified in this context: how to control the spread of the virus and to protect employees from contagion and how to develop the employees' awareness about the importance to respect the prevention measures implemented in the workplace. The main challenge for managers and HRM practitioners, in this context, is to identify the risk factors and to implement the proper prevention measures in the workplace, including for employees working from home (*Hamouche, 2020). Three phases that all resilient managers must face amid the COVID-19 outbreak*:
1. Respond – dealing with the present situation and managing continuity
2. Recover – learning and emerging stronger
3. Thrive – preparing for and shaping the "new normal"

HR leaders and managers, in particular, have been at the centre of their organization's rapid response to this crisis, and have been playing a central role in keeping the workforce engaged, productive and resilient. Understandably, recent priorities have been focused almost exclusively on the respond phase. workforce strategies in the recovery phase will be best orchestrated through five critical actions: reflect, recommit, re-engage, rethink, and reboot. These actions can help organizations to bridge the crisis response to the new normal by laying the foundation to thrive in the aftermath of the crisis. (https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/human-capital/ca-en-human-capital-workforce-strategies-post-covid-19-recovery-workbook-aoda.pdf)

Reflect. Create the time to reflect on what's next and think about what has worked, what you learned, and what has been missed in the response.

Recommit. Reinforce commitment to well-being and purpose through a focus on physical, physiological, and financial concerns.

Re-engage. Redeploy workforce and maximize the workforce's contribution and potential, while preparing the workforce with the skills and capabilities for the return.

Rethink. Utilize new business priorities to rethink and reconfigure the work, workforce, and workplace and balance ongoing and evolving business needs.

Reboot. Realign HR and people operations priorities with the most pressing business and workforce priorities.

Employment relationship refers to 'the connection between employees and employers through which individuals sell their labor' (*Budd & Bhave, 2010*). From a labor law perspective, COVID-19 has created important challenges for employees and employers (*Biasi, 2020*). Due to the lockdown and mandatory closure of business both were not able to accomplish their contractual obligations *(Biasi, 2020)*. In fact, the challenges resulting from COVID-19 have transformed the traditional relationship between the employee and his employer *(Leighton & McKeown, 2020).* Currently, with the recent development of COVID-19 vaccines, the main challenge for organizations from an employment relationship perspective is the management of the vaccination campaign in terms of costs and application, while ensuring compliance with the country regulations (*Rothstein, et al., 2021).* This development also raises the question about the ability of the employer to impose it on their employees. Economic recovery hinges on the vaccine rollout and the durable containment of the pandemic. Even if the pandemic is brought under control, damage to the economy could persist for longer than expected. *(Serafimova, M., Stefanoska, B., 2021)*

The bright side of Covid-19

COVID-19 has posed grand challenges for managers and HRM practitioners, but it has also opened the door to opportunities worth knowing and understanding, that can help organizations to direct their future actions. Indeed, according to Demirkaya and Aydın *(Demirkaya and Aydın, 2006)*, a crisis might create unexpected opportunities for organizations. COVID-19 has challenged organizations' creativity and innovation and has urged discussions about the future of work (*Hite & McDonald, 2020).* It has accelerated the disruption of HRM as well as the implementation of scenarios expected for the future *(Hite & McDonald, 2020)*. Moreover, it has pushed organizations to rethink their HRM strategies and to go beyond the traditional models of managing human resources, by positioning new information technology as an essential partner to survive and to ensure the sustainability of their business. Despite its challenges, remote working offers employees the opportunity to have flexible working hours, save commuting time, foster job control, and experience the use of new ICT *(Prasad & Vaidya, 2020)*. In addition, it offers companies the opportunity to optimize the use and save the costs of their resources, e.g., office space. Moreover, COVID-

19 offers opportunities for organizations to develop the autonomy of their employees, upgrade their digital competencies, and broaden the perspective of their competencies' development. Besides, this pandemic has positioned new technology as a strategic partner for organizations. It has helped to sustain businesses and to shorten the distance between employees and their employers while ensuring their safety. It has fostered the creativity of managers and HRM practitioners and it has facilitated the transition from traditional face-to-face socialization methods to virtual ones, e.g., virtual meetings, lunches, and coffee breaks (*Carnevale & Hatak, 2020*). The new technology has also supported the management of safety and health in workplaces. It has helped to implement the decision to keep the employees at home and to protect them from the risk of infection, while they keep on working for the organization.

Conclusion

Human resources management in the organization is the responsibility of managers who participate in the implementation of activities and decision-making related to human resources management. A well-developed human resources management system enables the employment of adequate workers and their guidance in the work of the organization. The expectations that the organization has from human resources managers are extremely high, it is expected to have exceptional managerial qualities, to be constantly educated and developed, to follow new trends in human resources. The modern enterprise is exposed to various challenges. Business performance and human resource management are influenced by various contemporary trends and changes. These include globalization, technological trends, trends in the nature of work, and demographic trends. In accordance with the changes that have taken place, human resources management takes place within the framework of modern practices and undoubtedly requires strategic management, special evaluation of information and respect for fundamental ethics of management. No one can predict a crisis with the magnitude of *COVID-19*, which has accelerated the disruption of traditional methods of HRM and has created significant challenges for managers and HRM practitioners, who were not fully equipped in terms of information, resources, and competencies to cope with the complexity and the novelty of this pandemic. Besides these challenges, COVID-19 has opened the door to opportunities that organizations should know to be able to properly direct their future actions in HRM.

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GOVERNANCE OF TERRITORIAL COHESION AND COOPERATION POLICIES (ON THE EXAMPLE OF SPAIN AND PORTUGAL)

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Abstract
Territorial cooperation, and in particular cross-border cooperation, is a key element in European integration and a political priority for the EU. An example of fruitful cooperation is the state borders between the EU countries, which are already almost symbolic with the abolition of border controls, customs controls and other functions performed until recently between them. The Luzo-Spanish border is the oldest, most stable and largest border in the EU. On January 1, 1986, both countries became members of the EU. Since the signing of the Schengen Agreement in 1985 and the accession of Portugal and Spain to it (25 June 1991), things have changed. In setting the strategic guidelines for cross-border cooperation between Portugal and Spain for the period 2014-2020 (and for the period 2021-2027), the Cross-Border Cooperation Program is undoubtedly the reference document related to EU regulations and directives, and the proposals of the European Commission.

Key words: Cross - border cooperation, territorial cohesion, European Union, policies, borders.

Introduction
The European Union (EU) and its territories depend on enhanced synergies between cohesion policies and competitiveness strategies, as well as on the development of sectoral policies to enable the most disadvantaged areas to meet the challenges of globalization, applying cross-border, transnational and interregional approach. Cross-border, transnational and interregional cooperation has already added and continues to add value: European, political, institutional, economic and socio-cultural added value.

Territorial cohesion is central to the EU's Territorial Agenda. This illustrates the need for the territorial dimension to play a more decisive role in the future of European cohesion policy and other Union policies. Territorial cohesion is a key factor in achieving the goals of economic growth and solidarity, as well as in building a highly competitive social market economy aimed at full employment, social progress and sustainable development. Territorial cooperation, and in particular cross-border cooperation, is a key element in European integration and a political priority for the EU.

An example of fruitful cooperation is the state borders between the EU countries, which are already almost symbolic with the abolition of border controls, customs controls and other functions performed until recently between them. Nevertheless, these borders remain important in the contours of the national geographical area of the Member States, on which the country concerned exercises its sovereign rights [8].

The Iberian Peninsula is the largest, most continental and least fragmented of the three southern European peninsulas with an area of 585,000 km^2. Within the peninsula are three

countries - Spain, Portugal and Andorra, as well as the British possession of Gibraltar. The border between France and Spain runs along the ridge of the Pyrenees, with two thirds of the mountain area entering the territory of Spain. The geographical location of the peninsula as a link between Europe and Africa is of great historical and economic importance [1].

The subject of the study is the possibilities for cross-border cooperation between EU countries. The object of study are the border areas between the Iberian countries Spain and Portugal. The aim of the study is to analyze the policies for territorial cohesion between the two neighboring countries.

Exhibition
The border between Spain and Portugal, known for centuries as La Raya, gradually emerged in the Middle Ages, when the Kingdom of Portugal was formed, as well as other countries on the peninsula. The Reconquista of the Iberian Peninsula, involving the efforts of these Christian states, marked the beginning of a long process of expanding, reformulating and consolidating land borders, but not always linearly and generally unpredictably [9].

On January 1, 1986, both countries became members of the EU. Since the signing of the Schengen Agreement in 1985 and the accession of Portugal and Spain to it (25 June 1991), things have changed. The existing border is now configured as a basis for comparison, and attempts to build a cultural identity across the border seem absurd, as there are significant variations in identity on both sides of the same border and even within the same locality and environment. the same people. Today, it is clear to the unbiased observer that the Luso-Spanish (Lusitania is the ancient name of Portugal) border is not so much a line of territorial demarcation between two countries, but rather a vast contact zone of transition and mutual penetration between two neighboring peoples.

The Luzo-Spanish border is the oldest, most stable and largest border (1234 km) in the EU. At the same time, it is one of the territories with lower levels of demographic and economic development and with genetically identical population in territories differentiated by the action of the historical process in each country and by the dividing line that causes significant differences, both in terms of cultural roots, and in terms of what determines the other forms of ownership and development of the area. In addition to the land border, special attention deserves the sea border, where significant economic activities are taking place, especially in the field of fisheries, as well as the resources it offers and the risks for which it must provide emergency prevention and management.

These differences have prevented some more convincing convergent results, due to marginality in relation to the major centers on both sides, isolation and the barrier effect caused by political disruption, which means that the border is a weakness in the development process. As mentioned above, contacts in the European integration process are intensifying, especially after the launch of the INTERREG Operational Programs for Cross-Border Cooperation, which provide significant changes in the border area between the two countries. There are mitigating consequences where the situation is almost overcome, such as geographical isolation, while others, for the most part, are in different phases of the respective convergence processes. In some cases, both in terms of facilities and infrastructure, the approach to recovery and reaching the national averages is at an advanced stage, and in others, such as the population, even without reaching the national dynamics, there is a significant recovery throughout the territory. During the last programming period, the socio-economic and territorial dynamics allowed the Luzo-Spanish border to continue to be an expression of precisely these findings: convergence and different speeds, between border territories and countries.

The Portugal-Spain cross-border operational programs cover an area comprising 17 NUTS-III main and 16 NUTS-III border, located on the border between the two countries (Fig. 1). This territory covers a total area of 137,013.9 km^2 (27.1% of the territory of the Iberian Peninsula). This is 3.1% of the EU-27 territory, and together with the neighboring areas the territory is 244,379.8 km2 (5.53% of the EU territory). It has a population of 5,491,228, which represents about 10% of the total population of the two countries. Including the adjacent territory, the population grows to 14,918,043, which is 2.9% of the EU-27 population. Despite the relatively small population, this program has a strong territorial impact [2].

Figure 1: Cross-border cooperation regions between Spain and Portugal
Source: [10]

Although the management of cross-border cooperation programs has changed over the last thirty years, and not always effectively, it can be concluded that the assessment is generally positive, not only in terms of EU border policy, but also in the population as a whole, in general, in terms of the fuller integration of border regions and the implementation of INTERREG programs.

Cross-border cooperation programs have given a powerful impetus to the convergence of European border areas. However, the more progress and success, the new priorities are constantly emerging.

As observed in previous programs, the removal of borders does not mean the removal of barriers, especially administrative ones, implemented by national policies that negatively affect the development of border areas, which have their own and distinctive features.

The adjacent territories along the Luzo-Spanish border today face new challenges posed by the need to engage in sustainable development initiatives, which must coordinate cohesion and competitiveness policies. It is therefore necessary to have a critical mass that allows the viability of development policies and strategies to integrate neighboring areas, which are usually on both sides of the border and therefore belong to another country.

In setting the strategic guidelines for cross-border cooperation between Portugal and Spain for the period 2014-2020 (and for the period 2021-2027), the Cross-Border Cooperation Program is undoubtedly the reference document related to EU regulations and directives, and the proposals of the European Commission. It is therefore necessary to outline a strategy for cross-border cooperation between Portugal and Spain during the new programming period [4]. As a follow-up to the policies of previous cooperation programs, strengthening local associations and promoting joint cross-border services, five key ideas emerge:

    1. Focus on territorial cohesion and cooperation policies;

    2. Cross-border territorial cooperation is defined as a strategic goal, covering 37% of Europe's population and around 500 cities;

    3. Cooperation requires good governance and responsibility, always seeks closeness, and good examples of Euroregions must be adapted to macro-regions;

    4. Cooperation needs to build strong common structures and networks, such as the respective territories;

    5. Cooperation strengthens the unity and solidarity formulated by J. Delors and so necessary in the context of crisis and new challenges [5].

Attention should be paid to the „socio-economic study of the Luzo-Spanish border" in terms of the effects achieved as a result of more than three decades of cross-border cooperation in economic, social and territorial terms:

    1. Economic cohesion:

    - Need for faster growth of GDP per capita, corresponding to the respective weight of the population in the border area;

    - In relative terms, the border area overcame better the first phase of the economic crisis in terms of reducing the number of enterprises, but this is generally due to the less important industrial structure compared to the farms of the countries concerned;

    - The decline in the number of agricultural holdings is not offset by the expected increase in labor productivity.

    2. Social cohesion:

    - The border needs large investments in the formation of human capital, as many of its residents at NUTS III level see an increase in people with higher education, which is below the regional average, but above the national average. From this point of view, the available capacity needs to be used more rationally [6];

    - Social services at the border are seriously threatened in these times of crisis, which is accompanied by a reduction in investment in health and social care and the removal of support for public libraries and other cultural sites.

    - There is a trend of aging population, which is dangerous from the point of view of social cohesion, this trend is expected to continue in the coming years and if it is not eliminated by migration, it must be activated by creating more attractive conditions for life at the border.

    3. Territorial cohesion:

    A). The Luzo-Spanish border includes several urbanized areas:

(I) the La Coruna-Vigo-Braga-Porto urban axis is a polycentric area with a high population density and a significant exchange of flows of people and goods;

(Ii) a monocentric urban axis based in Badajoz has the potential to grow into a polycentric zone encompassing the settlements of Evora-Beja-Portalegre-Cáceres-Merida-Badajoz. It has better access to the interior, but is less populated, with negative migration rates and excessive dependence on the Lisbon-Madrid axis;

(III) The Faro-Huelva urban axis has great potential in terms of human and commodity flows, good accessibility and high average population density, but has small-scale urban structures including medium-sized interconnected cities that are poorly complementary. in economic terms;

(IV) The urban axis along the Valladolid-Salamanca-Viseu-Aveiro line, due to low population density, international flows of goods and the availability of urban centers, is in a demographic crisis.

B). In general, territorial cohesion depends both on the degree of accessibility, which has shown noticeable improvements, and on the degree of creation of joint structures for cross-border cooperation, which have legal personality and contribute to reducing costs in a cross-border context, increasing attractiveness on the territory and act in defense of the common interest.

Thus, in view of the Community's priorities and the problems of the border areas, priorities can be outlined for each area [4]:

1. Economic, which has as its main objective the creation of employment:

(a) Promoting the creation of cross-border clusters in productive key sectors of the border (agro-industry, industrial zones, renewable energy, automotive industry);

b) Promoting the sustainable tourism sector to act as a driver of local economic development;

c) Encouraging banks to support agriculture, livestock and forest resources, in line with the new CAP;

d) Promoting the proper functioning of public administration, business and education and research centers to be placed at the service of local development;

e) Promoting accessibility at the border.

2. Social cohesion, whose main goal is to improve the quality of life of citizens:

a) Social entrepreneurship;

b) Promotion of joint vocational training programs;

c) Promotion of joint educational programs;

d) Promotion of joint health equipment and services.

3. Territorial cohesion, with the main aim of territorial articulation around the polycentric networks of small and medium-sized towns along the border:

a) Encourage the establishment of cooperation structures with legal personality;

b) Encouraging the creation or strengthening of logistics platforms in the main areas interconnected on both sides of the border;

c) Improving accessibility, especially with regard to rail transport;

d) Stimulating cross-border public transport.

It can therefore be concluded that the Portugal-Spain cross-border cooperation strategy will try to combine the most important objectives of the Europe 2020 Strategy - innovation, growth and jobs - with the recommendations repeated in the Territorial Cooperation Program 2020 [7]. This document, adopted by the European Ministers responsible for Spatial Planning and Development, previously updated by another document (Leipzig, 2007), adapts it to the current economic and social situation and the new one obtained in the context of the Lisbon

Treaty and its adaptation to the Europe Strategy 2020. The following guidelines [3] should be noted:

(I) neighboring cross-border areas with additional opportunities must join forces and share their comparative advantages, thus creating additional development potential;

(II) cities should focus on networking innovation in order to improve their efficiency and competitiveness, both in Europe and globally;

(III) a polycentric territorial development policy must boost territorial competitiveness in the EU;

(IV) territorial cooperation initiatives should focus on long-term objectives for territorial cohesion and, where necessary, with the support of the European Commission;

(V) balanced cooperation and association between rural and urban areas, specific to each region, must be developed.

In this way, territorial cooperation aims to help regions and cities respond to new cross-border and transnational challenges and use their potential. It can therefore be concluded that territorial cooperation not only depends on the progress that European integration can bring, but in fact it itself contributes to its realization.

Conclusion

Territorial cohesion will continue to be at the heart of the EU's Territorial Agenda. This calls for the territorial dimension to play a more decisive role in the future of European cohesion policy, among other policies pursued by the Union.

Territorial cohesion will be a key factor in achieving the goals of economic growth and solidarity, as well as building a highly competitive social market economy geared to full employment, social progress and sustainable development. Cross-border cooperation between Spain and Portugal will be among the key elements in European integration and a political priority for the EU.

Although the management of cross-border cooperation programs has changed in recent decades, the assessment is generally positive, not only in terms of EU border policy, but also in the populations of Spain and Portugal, in terms of fuller integration of border regions and the implementation of INTERREG programs.

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IMPACT OF PERSONALITY ON INTERPESONAL RELATIONSHIPS AND SUPPORT

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Abstract
Personality can influence to whom individuals are attracted and how often they interact in social situations. Personality even influences how successful people are at getting along with other people. Indeed, social behaviour is often shaped by the dispositions of the individuals involved in the interactions (Ozer and Benet-Martínez 2006). Conversely, social relationships can also have a profound effect on personality. First, we will begin by examining the direct effect of personality on social relations across a range of interpersonal relationships that occur during the lifespan. Secondly, we will focus on how personality not only influences social relations, but how social relations also can shape personality. We will conclude by discussing newer methodologies that allow researchers to study both personality and social relationship effects simultaneously. The personality dimensions presented are not meant to be exhaustive but instead are offered as examples when considering the association between personality and social relations across the lifetime. We should also note that we will use the terms temperament and personality somewhat interchangeably. Personality, on the other hand, has been defined as 'an individual's characteristic pattern of thought, emotion, and behaviour'. Given that both definitions focus on characteristic patterns of responding, there is considerable overlap in these two constructs when attempting to understand how these differences influence social relations across the lifespan.

Key words: *personality, social relationships, social support*

Introduction
Establishing and maintaining social relationships with others are some of the most important tasks an individual faces (Baumeister and Leary 1995). Although the interpersonal dynamics of a relationship are important in understanding how it is formed and maintained, the characteristics an individual brings to that relationship may be equally as important (Robins, Caspi and Moffitt 2002). For example, personality characteristics associated with socio-emotional competence (e.g., Extraversion, effortful control, empathic accuracy, Neuroticism) have been found to predict both the duration and quality of relationships across the lifespan. The role of personality on social relations can be seen as early as infancy in the relationship between an infant and care-giver. For example, attachment researchers believe that a warm, receptive parenting style is crucial for developing secure attachments with an infant. The personality of the parent, however, appears to play a critical role in his/her ability to provide this warm, nurturing care-giving. Recent models of socialization posit that the personality of both the child and parent can influence the socialization process (Belsky and Barends 2002; Lytton 1990; Putnam, Sanson and Rothbart 2002). Having a responsive mother is particularly important for anger-prone infants; when a mother is highly responsive, an anger-prone infant is likely to become highly cooperative over time. As children grow older, peers and friends become increasingly important. Peers provide contexts for learning social skills, are resources of emotional and cognitive support, and can be used as practice for later relationships (Asher and Parker 1989; Hartup 1992). Extraversion has been linked to social competence in children. Extraversion involves a person's general level of sociability. Extraverted individuals are more likely to experience positive affect, which may in turn lead to smoother interpersonal

relationships. Indeed, Extraversion has been associated with general peer acceptance. Conscientiousness has also been found to be important for childhood peer relationships. Conscientious children are less likely to be victimized and rejected than children lower in Conscientiousness. Moreover, Conscientiousness is positively related to friendship quality. Conscientiousness reflects a person's self- control processes and enables them to maintain appropriate social behaviour that, in turn, allows for higher quality peer relationships (Jensen-Campbell and Malcolm 2007). A large body of work has also established the link between personality and social relationships in adulthood, especially through the exploration of romantic relationships.

Transactional models of personality development
To date, personality research has focused primarily on how personality influences relationship experiences. An equally important issue involves whether relationship experiences can cause changes in personality. Undeniably, personality development is a complex process integrating the individual and the social environment; we cannot ignore how social relations may influence an individual's personality. The notion that there is a co-development of personality and relationships was perpetuated by the dynamic interactionist paradigm (Caspi 1998; Magnusson 1990). It is suggested that personality and the environment are relatively stable over short periods of time, such as a few weeks. However, both personality and the environment are subject to change over longer periods, such as months or years (Asendorpf and Wilpers 1998). With this in mind we can assume that these changes are influenced by both the individual's own personality and the social relations in which they are involved. For example, a dyadic relationship between spouses can be seen as a transactional or dynamic interactional relationship. The personality of the wife may influence and be influenced by the personality of the husband over time. In addition, the quality of the marital relationship can influence and be influenced by the personalities of both spouses. Recent empirical consideration has been given to transactional models of personality and social relations (Asendorpf and Van Aken 2003;). For example, Robins, Caspi and Moffitt (2002) found that not only did antecedent personality characteristics predict social relations, but social relations also predicted changes in personality over time. When individuals were involved in romantic relationships that were maladaptive, their negative emotionality increased over time. As late as the 1990s, it was assumed that personality was essentially fixed and unchanging by age thirty. Recent empirical evidence suggests that personality does reliably change in middle adulthood; moreover, midlife concerns associated with social relations (e.g., work stress, social support) influence personality change (Van Aken, Denissen, Branje et al. 2006). For example, marital tensions and divorce predict changes in dominance and masculinity/femininity in women during early and middle adulthood (Roberts, Helson and Klohnen 2002). Another approach to understanding how social relations may influence personality change in adulthood is the Social Investment Theory, which attempts to understand why there are not only individual-level changes in personality (via interpersonal transactions), but also consistent mean-level changes in personality during adulthood. For example, adults as a group (i.e., mean level changes) become more agreeable, emotionally stable and conscientious over time. Experiences that are linked to social roles are believed to influence these mean-level changes in personality (Wood and Roberts 2006). For example, although there are increases in Conscientiousness and Emotional Stability in adulthood, only persons experiencing satisfying relationships show these predicted increases. The most important individual differences in interpersonal relationships become encoded into language across many cultures (Hogan 1983; Wiggins 1991). Different cultures may value different personality qualities in social relationships. The function and significance of certain personality traits may differ by culture, which may have serious implications for how personality is associated with social relations (Chen, French and Schneider 2006). Shyness-inhibition is also

more a social liability in individualistic cultures that promote social initiative and independence. Behaviours associated with shyness- inhibition (e.g., being reserved), on the other hand, are more valued in collectiv- istic cultures that emphasize interpersonal harmony and interdependence among individuals (Chen, Wang and DeSouza 2006). Indeed, shy American children are more likely to be neglected by the peer group; shy American men are less likely to initiate relationships. In China, a more collectivistic culture, shyness is associated with being more socially mature in children. Most researchers would agree that individuals do not live in a vacuum. Not only does one's personality influence social relations, but the vast array of interaction partners (e.g., romantic partners, friends, strangers, co-workers) a person comes into contact with influence the way a person thinks, feels and acts. This reciprocal or mutual influence is often termed interdependence.

Social relations model

The social relations model (SRM)[1] is a two-way random effects statistical model which examines the interaction between personality characteristics and social relations (Kenny, Kashy and Cook 2006; Lashley and Kenny 1998). SRM treats each individual in an interaction as both a subject and an object (Malloy and Kenny 1986) with each dyadic score a function of four components: constant, actor, partner and the relationship (Kenny, Kashy and Cook 2006; Kenny 1988). The constant represents the group mean (i.e., the average group level of an outcome score) and accounts for the variation of an outcome measure as it differs between interactions. To help illustrate, imagine a study in which the outcome measure is Agree/ableness. The constant component accounts for differing levels of Agree/ableness across dyadic interactions. The actor and partner components account for the individual responses of the dyadic members. For example, individuals may consistently rate people high or low on Agreeableness. The actor component accounts for the target member's outcome scores (i.e., how agreeable the target member consistently views his/her partners). Instead, this effect estimates the amount of variability in how consistently the target member rates various interaction partners on a particular outcome (i.e., in this case, Agreeableness). The partner component, on the other hand, accounts for whether the interaction partner is consistently rated on the outcome behaviour regardless of the dyadic partner. For example, the partner component would account for the degree that all interaction members view the partner as agreeable. The relationship effect reflects the variance in the outcome score above and beyond the individual contributions of each dyadic member (i.e., accounting for the variability in Agreeableness after parsing out the effects of the actor and the partner). In sum, variability is accounted for at multiple levels including the group level (i.e., the constant components), the individual level (i.e., the actor and partner components), and the dyadic level (i.e., the relationship component). This ability to partial out actor effects has the potential to enhance the field's understanding of personality's role in social behaviour and relationships. SRM provides the unique ability to tease apart the variance of the effects and thus account for the unique influence of personality in social environments.

Actor-partner interdependence model

The actor-partner interdependence model (APIM) is an interactional model which assumes a causal direction in that the actor and partner components cause the outcome measure (Kenny, Kashy and Cook 2006; Cook and Kenny 2005). APIM treats the individual predictor scores as being nested within the dyadic unit (Cook and Kenny 2005). As such, both individual scores and dyadic level scores are estimated. Similar to SRM, APIM makes use of actor, partner and interaction components. However, these effects have a very different meaning in an APIM than in the SRM. Again consider the above example with Agreeableness (Kenny, Kashy and

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[1] SRM- Social relations model

Cook 2006). In APIM, the actor effect assesses the degree to which a target dyadic member's agreeableness influences his/her own outcome score. The partner effect assesses the degree to which the partner's agreeableness influences the target dyadic member's outcome score. The actor effect is computed while holding any partner influence constant; the partner effect is computed while controlling for any actor effects. The ability to estimate the partner effect is a key strength of APIM (Cook and Kenny 2005). Estimating the partner effect allows researchers to truly examine interpersonal effects by accounting for the variance of the partner's influence. Most social and personality theories acknowledge effects of interaction partners. APIM presents a statistical method to account for such interdependence. APIM can be used with both categorical and continuous data and can examine both the individual effects of each dyadic partner as well as the joint influence of the dyadic partners.

Relationship between personality and social support

Much of the early work investigating the construct of social support was based on epidemiological studies which showed that having supportive contacts with others was beneficial to health and wellbeing (Caplan 1974; Cobb 1976). Findings from this work led to the implicit assumption that the agent of influence regarding levels of social support was the social environment of the individual (i.e., the individual's social network size), rather than dispositional factors of the person. However, by the mid-1980s, researchers were beginning to recognize the importance of personality in predicting coping responses in general (Parkes 1986), and the use of social support, in particular (Sarason and Sarason 1982). Much work has been done in the area since this time and hundreds of studies have documented the association between social support and various personality traits. Drawing from Scarr and McCartney's (1983) model of person-environment interaction, Pierce and his colleagues suggested that, first, personality might influence how supportive behaviour is perceived and responded to (reactive interaction). Essentially, individuals who experience similar levels of support may perceive this support quite differently. Individuals differ in the manner in which they evoke supportive responses from others (Pierce, Lakey, Sarason et al. 1997). While one individual's behaviour might signal a preference for support, another person's manner might convey the need for interpersonal distance. Individuals are active participants in selecting and creating their social world and, as such, play an important role in influencing the level of social support available to them. For instance, individuals who are more outgoing and social (extraverted) tend to report greater numbers of people in their social network (Swickert, Rosentreter, Hittner and Mushrush 2002), probably because they are more inclined to seek out interactions with others, as compared to more introverted individuals.

Social support

The construct of social support generally refers to the perception by the individual that he or she is cared for, loved and valued by others. It is believed that this sense of support and community helps the individual to manage the uncertainty of life events by enhancing feelings of personal control. Functional support is defined as an individual's perception of support available from others, as well as the support that is actually received from others. Within this general social support category a variety of supportive functions have been identified by researchers, including enhancement of self-esteem, feelings of belonging, guidance from others, and provision of tangible assistance. Regarding the assessment of functional support, various questionnaires have been developed to measure the different forms of functional support that have been identified in the literature. The other major form of social support, structural support, refers to the degree of embeddedness of the individual within a social network of significant others (Lin and Peek 1999). This type of support is often reflected by the number of people in the individual's social network (termed network size) and is assessed by asking the individual to record the names of all people they could turn to if support were

needed. Based on this listing of individuals, the respondent is then typically asked to indicate their level of satisfaction with the support provided by each network member, the level of contact they have with network members, and the density of their social support network. This last characteristic refers to the extent to which members of an individual's social network know one another. Functional support, in particular, perceived availability of support, is not only weighted heavily when individuals consider their level of social support, it has been found to play an important stress-buffering role when people are under a high degree of stress (Cohen 2003; Thoits 1985). In particular, it is believed to provide a protective role as individuals experience stress, in that it might foster a less negative interpretation of the stressor which then, in turn, can help to reduce the individual's experience of stress and anxiety (Cohen 2003). Perceived availability of social support is most effective when there is a match between what is required to successfully cope with the situation and the type of social support the individual perceives to be available. However, individuals who perceive having others they can talk to and share experiences with (belonging support), as well as individuals who make them feel good about themselves (self-esteem support), may benefit despite the coping requirements of a situation as these types of support are deemed to be helpful regardless of the nature of the stressor (Cohen 2003). Social support can have a beneficial effect regardless of whether the individual is under stress. The main-effect model of social support has been associated most frequently with structural social support as this type of social support seems to be helpful regardless of the level of stress that the individual experiences. Research has shown that social network size is associated with reduced mortality rates (Berkman and Syme 1979; House, Robbins and Metzner 1982), and greater resistance to particular disease processes (Cohen, Doyle, Skoner et al. 1997). It also has been associated with reduced levels of anxiety, depression and psychological distress (Cohen and Wills 1985). Indeed, theorists have suggested that structural support may exert its positive effects on health indirectly, by reducing the individual's general experience of anxiety and stress. Social interactions with others are not always supportive in nature. Interacting with others who are interfering, manipulative or even hostile has been shown to have a negative impact on psychological wellbeing. Furthermore, the impact of negative interactions on the individual is often greater, compared with positive interactions (Rook 1984; Schuster, Kessler and Aseltine 1990). Fortunately, most people tend to report substantially more positive social connections than negative (Schuster et al. 1990), and positive social interactions have been shown to attenuate the negative effects of problematic social ties.

Conclusion
The links between personality and social relations support several general conclusions. Personality influences interpersonal relationships across the lifespan. The influence of personality and social relations is bidirectional; that is, not only does personality influence social relations, but social relations also influence personality development. The larger cultural context can influence the association between personality and social relations. Certain personality traits may be more valued in some cultures. Thus, culture may influence the display of certain personality traits and how they contribute to social relationships. Both the Social Relations Model and the Actor-Partner Interdependence Model are steps in this direction. Future research is still needed that assesses changes in personality as well as changes in social relations to better understand the causal relationships between the constructs and to better understand their stability versus mutability. In addition, research that better considers how culture and sub-cultural contexts influence the personality-social relations link is necessary. Nonetheless, the findings, provide a strong case that personality and social relationships share a symbiotic, dynamic relationship.

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MANAGEMENT OF HUMAN RESOURCE

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Abstract
Human resource management is a comprehensive coherent approach to staff recruitment and development. Human resource management can be considered as a philosophy of how people should be managed, and which is supported by numerous theories related to the behavior of people and the organization. Human resource management involves the application of policies and practices in the field of organizational design and development, providing resources for employees, learning and development, work and rewarding and providing services that improve employee well-being. All of these strategies are integrated and aligned with the organization's business strategy. Human resource management refers to all aspects of hiring and managing employees in the organization. Covers activities from strategic human resource management, human capital management, corporate and social responsibility, organizational development, resources (workforce, planning, recruitment and selection and talent management), learning and development, performance and reward management, relationships with employees, employee well-being and employee service delivery. Human resource management also has an international dimension.

Introduction
Human resource management is a comprehensive coherent approach to staff recruitment and development. Human resource management can be considered as a philosophy of how people should be managed, and which is supported by numerous theories related to the behavior of people and the organization. Human resource management deals with the contribution it can make in terms of improving the organizational effectiveness through people, but also taking into account the ethical dimension- how to treat people according to moral values. Human resource management involves the application of policies and practices in the field of organizational design and development, providing resources for employees, learning and development, work and rewarding and providing services that improve employee well-being. All of these strategies are integrated and aligned with the organization's business strategy. Human resource management refers to all aspects of hiring and managing employees in the organization. Covers activities from strategic human resource management, human capital management, corporate and social responsibility, organizational development, resources (workforce, planning, recruitment and selection and talent management), learning and development, performance and reward management, relationships with employees, employee well-being and giving services to employee .Human resource management also has an international dimension.

The key factor for successful management of enterprises is the focus on each activity, function or business process in a way that it is performed as quickly as possible and with better quality and lower financial costs. As one of the answers to the set requirements appears the outsourcing which enables the orientation of the enterprise towards the basic activities of operation and leaving the secondary activities to other enterprises that specialize in performing a certain type of activity.

The concept of human resource management

Human resource management is a process of managing people with a humane approach. A humane approach to the workforce allows managers to see people as an important resource. It is an approach through which the organization can use the workforce for the benefits of the organization, but also for the growth, development and satisfaction of all employees. That is why human resource management is a system that focuses on the development of human resources on the one hand and the effective management of people on the other hand, so that employees enjoy human dignity at work. (Ganesan: 2003: 147)

Emphasizing the importance of people for organizational success, i.e. in general, the scientific activity with the "human side" of the organization and management is not something new. Relatively new is the real practical interest of companies for human resources and their development and their management as a vital interest not only for the development and success of operations, but also the very survival of the company. (Koteski, C., Jakovlev, Z., Josheski, D.,: 2013)

When we talk about the human dignity of employees, we mean their capacity, potential, talents, success, motivation, abilities, commitment and so on. So their personalities to be recognized as valuable human beings. Human resource management is involved in every business and management activity.

Human resource management refers to all aspects of hiring and managing employees in the organization. Covers activities from strategic human resource management, human capital management, corporate and social responsibility, organizational development, resources (workforce, planning, recruitment and selection and talent management), learning and development, performance and reward management, relationships with employees, employee well-being and services to the employee Human resource management also has an international dimension.

Human resources are of great importance for the success of any organization, because most problems in the organizational environment are primarily human and social in nature. In the words of Oliver Sheldon, "No industry can be effective until the importance of a humane approach is recognized" (Geet, Deshrande & Deshrande: 2008: 24).

The philosophy of human resource management is often criticized by academics as a manipulative term, but that critique is gradually waning as the term human resource management becomes increasingly synonymous with what was once called personnel management. As Storey puts it, "In its generic broad and popular sense, human resource management simply refers to any system of human management" (Storey: 1998: 3-19)

Human resource management can be defined as a strategic, integral and coherent approach to employees, employee development and well-being. Boxall and Purcell define it as "all activities related to the management of employees' relationships in firms" (Boxall, Purcell, & Wright: 1997: 1–16)

According to Watson, human resource management is the use of the efforts, knowledge, skills and behaviors with which people contribute to the performance of work tasks in a way that enables the company to survive in the future. (Watson: 2007: 15–31) Human resource management is an executive function in the organization, whose goal is to treat employees as efficiently as possible in order to achieve organizational and individual goals. (Ivancevich: 2006: 5)

Human resource management refers to the human dimension of management. Given that each organization is composed of employees who perform their tasks, develop their skills, motivate employees to high performance and provide continuity in their commitment to the organization, is the basis for achieving organizational goals. Hiring and retaining good employees is critical to the success of any organization, whether it is a private, public or non-profit organization.

Definitions of human resource management can be grouped into two categories. According to the first approach, human resource management is a process of managing people in the organization in a structural and thorough way. This approach applies to employment activities, employee retention, remuneration and benefits, performance management, change management and leaving the organization. This is the traditional definition of human resource management, leading some experts to define it as a modern version of the former Personnel Management.

The other aspect of human resource management refers to the management of people in the organization from a macro perspective, i.e. management in the form of a collective relationship between managers and employees. This approach focuses on the goals and outcomes of the human resource management function. This means that the function of human resource management in modern organizations refers to the employees their development and focus on building an "employment relationship" that meets the expectations of both management and employees.

Simply put, human resource management is a managerial function that assists managers in recruiting, selecting, training and developing members of the organization and the process of efficient and effective use of human resources in order to meet the goals of the organization. Human resource management is constantly changing and improving, abandoning the traditional management models, which give way to modern, flexible, practical and humane forms of management, where we can freely talk about the humanization of productive relations expressed through greater motivation, satisfaction and adequate stimulation of employees.

The human factor in the organization
The turbulent changes in the environment, as well as the changes in the organization of modern enterprises, give a basic stamp to modern management models. The new paradigms of management models contain fundamental changes, primarily in the attitudes and valuation of the human factor in the organization. Namely:
  ¤   . Employees are increasingly becoming strategists, visionaries, leaders
  ¤   . Employees are not only executors, but also task creators
  ¤   . Human resources are the most important factor of operation
  ¤   Project, teamwork and cooperation are affirmed.

The theory and practice of management are dominated by the so-called "Soft variables", knowledge, creativity and ability of employees. In that sense, human resources become on the one hand a basic assumption for successful management, and on the other hand one of the focuses on which this function concentrates its attention. (Tanasijevic: 1993: 40-45)

Traditional human resource management consists of various practices grouped into areas such as remuneration, selection, training, evaluation. In doing so, human resource management treats these areas as separate functions. Traditional human resource management encompasses technical knowledge to run these functions and it is on the margins of the management structure.

Modern human resource management is becoming a key area of strategic management in the modern organization. It includes:
- ¤ Human resource practice such as recruitment, selection, evaluation and reward
- ¤ Human resources policy that directly and specifically determines the development of a specific practice of human resource management
- ¤ Philosophy of human resources with specific values that reflect the policy and goals of the organization

Successful human resource management, in addition to managers who are deployed at all organizational levels, requires appropriate experts with knowledge and skills in the field of psychological, sociological, organizational, legal and other sciences. With joint efforts and activities between managers and experts from human resources services, the best results are achieved in the process of managing employees and their potentials in the work process. (Tanasijevic: 1993: 46)

The competencies of these human resources services have been expanded and adapted to the modern organizational needs and interests, in relation to the work and activities of the former services that mostly dealt with employment and dismissal of employees, keeping personal documentation, recording and resolving certain social issues and similar. The traditional way of designing these services is abandoned over time because as a result of changes in the environment, accelerated technical and technological development, new challenges are set before management. Job requirements are changing and organizations need competent and capable people, visionaries, innovators and creators. In order to avoid misunderstandings and conflicts between line managers and human resources services, a process of division of tasks and activities takes place.

Human resource management is gaining importance in the modern organization, and its potential is used to achieve broader, flexible goals of the organization. Key developments in human resource management today include:
- ¤ Greater responsibility of managers for deciding on the recruitment of employees and the use of selection mechanisms that link the characteristics of employees with the requirements of the organization
- ¤ Rewarding according to the individual contribution, the assessed achievements of the goals, abilities and competencies required by the organization, which is contrary to the collectively determined and standard cost of work
- ¤ .Development of individual abilities and competencies through training, which is specifically related to the requirements of the organization and which establishes a link between individual career advancement and the dynamics of change and development of the organization.

It is obvious that the modern organization is increasingly demanding an active approach to human resources. This means new challenges and temptations for human resource management; employees will increasingly turn to organizations that will provide comprehensive personal promotion. At the same time, the organizations will be more and more determined to occasionally hire experts from specific professional profiles. Employees will be stimulated teamwork, decision-making, initiative, creativity, self-control and responsibility.

Objectives of human resource management
Human resources are a very important factor for achieving the goals of organizations. The specificity of human resources is reflected in the range of properties they possess in relation

to material resources. Human resources, whose capacity is fully used in an adequate and constructive way, provide a synergistic effect, because the overall results of the work are greater than the individual. The attitude of the organization and its management towards employees has an impact that is of economic, health and social nature. Only renewal and development are particularly important features that human resources possess and which with the use, i.e. entering the work process are not devalued, but on the contrary are confirmed and increased. In the opinion of many experts in the field of human resource management, investing in their development and management is much more profitable than investing in any other type of resources, due to the fact that without human labor there is no possibility of creating surplus value.

Establishing a balance between achieving the goals of the organization and the individual goals of employees is an ideal of human resource management. A basic principle that guides human resource managers is that the right people are in the right place at the right time, and in accordance with their capabilities and results are rewarded accordingly. The primary goal of human resource management is to provide a capable and competent workforce for the organization. In addition to this goal, there are other goals, which can generally be divided into four groups: (Aswathara: 2001: 8)
- ☑ Social, organizations to be ethical in their work, socially responsible for the needs and challenges of society.
- ☑ Organizationally, to recognize the role of human resource management in achieving organizational efficiency. Human resource management is not an end in itself, but a means to assist the organization in achieving its primary goals.
- ☑ .Functional, maintaining the contribution of special departments at an appropriate organizational level to meet the needs.
- ☑ Personal, to assist employees in achieving their personal goals, to enhance the individual's contribution to the organzation. Employees' personal goals must be maintained, maintained and motivated.

Other goals of human resource management are:
- Support the organization in achieving the goals, through the development and implementation of human resource management strategies as an integrated part of the business strategy of the organization
- Setting up and developing the organizational structure and desired working relationships between all members of the organization.
- Contribution to the development of a culture of high performance
- An organization that has talented, capable and motivated employees, as well as ongoing training and development programs.
- Creating a positive environment and relationships between management and employees, as well as a climate of mutual trust
- Ethical approach to human resource management
- Developing coordination between individuals and groups in the organization and ensuring the integration of the organization.
- When it comes to the time dimension, goals can be divided into:
- Long-term (strategic) goals that arise from the long-term needs and goals of the organization
- Medium-term and
- Short-term (operational) which, unlike the long-term, are more detailed and aimed at rational use of available human potential.

The objectives of human resource management must be in line with and compatible with the objectives of the overall operation. It is necessary to harmonize individual, organizational and

social goals, and at the same time to enable the realization of the strategy and reduce the negative impacts that come from the environment.

Functions of human resource management
- The basic activities related to human resource management, inherent in all organizations are:
- Job analysis - job description, salary formation, on-the-job education and the like
- . Planning - forecasting the required workforce
- Recruitment - seeing the opportunities and sources for recruiting the necessary staff
- . Selection - selection of the best candidates
- ☐ Introduction to work - integration of selected individuals in the organization
- ☐ Rewarding - developing an adequate rewarding system
- Employee development - career policy development
- . Health and safety at work
- Motivation for work
- Assessing the success and discovering the managerial potentials of the employees

Each of these activities has equal importance in the formation of human resources policy, but also its own special place, role and significance.

Job analysis is the process of gathering relevant information about work processes and specifying the knowledge, skills, skills and other requirements necessary to perform the job tasks. The job description and specification, the requirements from the candidates for a certain job enable the average of finding and retaining the candidates to be successful. (Petkoviħ, ħaniħijeviħ, & Bogiħeviħ: 1993: 454) Without determining the specifics of the job and the specific knowledge, skills and abilities that employees should possess, recruitment cannot be approached.

The good attitude of employees towards work does not happen by itself. Job analysis and the correct projection of job assignments also have implications for the fairness of the reward system. Without good analysis it is difficult to justify differences in employee earnings.

"Recruitment is a process in which the organization expresses its needs, in terms of structure and number of executors, on the one hand, and interested candidates express their desire to work in a particular organization." It is a two-way process in which both parties should be satisfied. The purpose of the recruitment is to attract as many candidates as possible, so that the appropriate selection can be made later.

The recruitment of candidates can be done from two sources, from the organization itself (internal recruitment) as well as from outside, from the labor market (external recruitment).

Internal recruitment can also be used as a way to promote employees, as a form of rotation from one job to another, as well as a form of internal transfer of employees between organizational units in the organization. This way of recruiting has its pros and cons. The positive aspects are reflected in the fact that it is a cheaper way of recruitment, in this way the loyalty of the employees and their commitment to the work is encouraged, because they know that they will be rewarded for the successful work by promotion or transfer to a better job. The disadvantage of internal recruitment is that in this way the organization over time becomes closed to new, fresh ideas and changes.

External recruitment is done from external sources. It can take place through schools and colleges, through specialized agencies, media advertising and the like. Unlike internal recruitment, external recruitment means higher costs for the organization, additional training costs and introduction to the job. In addition, there is a greater risk of choosing an inappropriate candidate. The benefits of internal recruitment are many: new people refresh the organization, drive change, and make the organization more open, flexible and vital.

<u>Selection</u> is a process in which a selection is made between the candidates according to predetermined criteria, which best suit, the needs of the organization. Selection is a complex and responsible process that consists of several stages: (Petkoviħ: 1999: 207)
- Filling out application forms
- First detailed interview
- Tests
- Check the data and attached recommendations
- Analytical interview
- Job offer

During the selection, it is possible that after the first interview the candidate will be offered the job, but if it is not possible to assess the candidate, testing can be applied as a form of checking the abilities of the candidates. Based on the test results, the candidate's impression and the reference check, the manager decides whether the candidate will be offered the job.

The newly selected employees should be involved in the work process, get acquainted with the organizational culture, the code of conduct, the expectations from the workplace. All this is done through the <u>process of introducing</u> new employees.

An important function of human resource management is the <u>training and development of employees.</u> Modern organizations invest large sums in training and development of employees. A distinction needs to be made between training and development. The training is a change in specific knowledge, abilities and skills, and its purpose is to improve employee performance. Unlike training, employee development does not have to be related to an existing job. The purpose of development is to prepare for a new job and to be promoted.

The training of the employees can be done through trainings that can be organized on the job, outside the organization through courses and simulations and the like. Development management on the other hand is necessary due to the large fluctuation of managers, the lack of quality managers and the growing affirmation and importance of continuing education and development. The purpose of employee development is to strengthen the ability of employees to successfully take on broader responsibilities in the organization. Development usually refers to the improvement of the intellectual or emotional abilities necessary for better performance of work tasks. The quality and quantity of training and development are influenced by certain assumptions, including:
- Changes in the external environment - technological changes, new laws
- Changes in the internal environment - new processes, new markets
- Availability of the necessary skills among the existing staff
- To what extent is the idea of internal career development supported in the organization?
- To what extent does management view training as a motivating factor for employees
- The knowledge and skills of the people conducting the training

<u>Performance appraisal</u> is a complex, delicate and responsible activity in the organization because it depends on the position of the employee in the organization, the amount of salary, career advancement. A well-designed and standards-based performance appraisal system is

the basis for properly comparing the achieved results with the planned ones, and the basis for undertaking corrective actions.

Different methods can be used for performance evaluation such as: questionnaires (scales), pair wise comparison, ranking and the like. The more techniques and methods used in combination, the more reliable the assessments and assessments will be.

Employee rewarding applies to all employees and is one of the main tools in shaping employee behavior. Rewarding includes tangible and intangible rewards. Material rewards are included in the earnings system, while intangible rewards are related to status, career advancement.

Earnings consist of direct and indirect part. The direct part consists of the basic salary as a fixed amount and the earnings based on the performance as a variable component. Indirect earnings are influenced by legislation and include benefits (health, social security) and benefits (free kindergartens, food, recreation and other benefits). (Bogićević: 1996: 54)

A good reward system should favorably affect the organizational climate, interpersonal relationships, be based on the principles of equity, because only such a reward system will be a good motivator and motivator for achieving individual and organizational goals and performance.

Organizations are committed to providing a healthy and safe work environment for their employees. On the one hand, physical and mental health affects the final results of the organization, and on the other hand, there are laws that prescribe the levels of safety that must be maintained in the work environment. The main goal of health and safety programs is to prevent workplace injuries and accidents and knowing the causes that affect the health and safety of employees is crucial.

Everyday monotonous things can cause monotony in employees, who begin to pay less attention to their tasks, to create bad habits that can lead to accidents and injuries in the workplace. The only way to solve this problem is to redesign the work in order to avoid monotony. Other factors such as fatigue, poor lighting, and equipment layout and control point must also be considered. In organizations it is necessary to conduct training of employees on better use of protective equipment, to reduce fatigue and strengthen awareness of the dangers in the workplace.

Employers must also conduct regular systematic check-ups for employees, which is an investment in the physical health of employees who are unable to see a doctor due to inconvenient work schedules, indecision or lack of funding. When employees have problems, usually they use the organization times. Organizations in which employees are constantly exposed to stress have higher rates of absenteeism and fluctuations; the number of accidents at work is also increasing. Stress also affects employee satisfaction, so organizations can and should manage the stress experienced by employees.

Good coordination of human resource activities is especially important to ensure equal treatment of all employees in the organization. Policies, rules, procedures, discipline, are just some of the methods used to achieve good staff coordination. Procedures are common methods of performing certain activities, the rules more closely determine the activity to be taken in a given situation, while policies must be consistent, reasonable, necessary, applicable, understandable and conducive to communication between employees.

Human resources as a source of competitive advantage of organizations

The bearers of the process of globalization are the large global organizations, which in modern economic conditions represent the skeleton of the world economy.

"Global organizations are a group of economic entities, which, regardless of the legal form or sector of action, operate in two or more countries, in the decision-making system, which allows with the help of one or more decision-making centers to pursue a specific policy and joint strategy. "They can have a significant impact on the performance of those who become involved, especially when it comes to the distribution of knowledge, resources and responsibilities." (Hofstede: 2005: 218-268)

Their emergence is associated with the rapid development of the productive forces, science, technique and technology.

Global organizations play the most important role internationally and become a significant economic power and the most powerful subject of international economic relations. The power of global organizations comes from their unique ability to use finance, technology and modern operations to integrate production globally and thus pave the way for a large world market. The very fact that these organizations have a large number of branches in other countries in the world, where the workforce is employed, indicates the importance they have for the economies of those countries in which they conduct their economic activity.

Many countries, especially those with lower levels of development, are opening the door to foreign direct investment and global companies as their carriers. Competition and constant changes in the environment affect all areas of human life and work. Successful in such an environment are those organizations that develop the ability to quickly learn and use available resources to create competitive products and services.

In a competitive global economy in which all other factors of production - capital, technology, raw materials and information - can be copied, people in organizations will be the only source of constant competitive advantage. That is why global organizations must pay attention to this resource through which they can provide a competitive advantage over other organizations. (Deresky: 2008: 156-220)

The global environment imposes the need for global, creative leaders and managers who manage knowledge, provide an entrepreneurial atmosphere, and create organizations that base their work on teamwork. For the organization to be able to develop its global staff, it must strive to create an atmosphere in which staying in another country is a positive experience for managers. This means that staff planning must be done carefully, global staff must be supported during their stay in another country and their experiences and skills must be used. The global organization must create an effective global management team and maximize the benefits of the workforce in different locations around the world.

The organization can benefit from developing new skills and experiences that a manager can gain on assignment in another country. The organization must use that knowledge if it wants to create an experienced management team that will be globally oriented, and which will be a significant part of the organization's competitive advantage.
The role of the global leader is to work with employees to achieve the goals of the global organization. In order to help employees, realize their greatest potential in the workplace, managers must develop the perfect strategy to create a successful organization. (Kitchin: 1991: 203-225)

The modern operation of organizations in a turbulent environment cannot be imagined without adequate production resources, and people with their abilities are one of those resources. The importances of human resources are considering that they directly affect the efficiency of organizations, and thus the competitive advantage.

Modern management should not be a new and successful way of manipulating employees and their abilities and opportunities in order to make more profit. It should be a new style of employee management, which above all ensures the well-being of each employee, its positive development but also the development of the organization, and thus the society as a whole. (--Tangl - Šušnjar, & Zimanji: 1997: 8)

The purpose of modern management is to predict the future and to create such a job where employees will give their best. Competitiveness that used to be built on the possession of specific resources, low costs, gives way to competitiveness based on knowledge possession and effective knowledge management. That is why modern organizations are increasingly directing their resources to education, continuous training of employees and management of their careers. The ability of people to learn and apply their knowledge is an indispensable resource for the organization and its enduring competitiveness. The key competencies of the employees are built through the learning process, which further emphasizes the importance of human resources as a lasting source of competitive advantage. (--Tangl - Šušnjar, & Zimanji: 1997: 8)

Conclusion

The topic covered in this paper is "Human Resource Management". The motivation for processing this topic was the fact of the great importance of the human factor for effectiveness and efficiency in business activities. It is also worth noting that there are a small number of researches in this field, within our area, so it should be further studied from a scientific and practical point of view given its relevance.

The turbulent changes in the environment, as well as the changes in the organization of modern enterprises, give a basic stamp to modern management models. The new paradigms of management models contain fundamental changes, primarily in the attitudes and valuation of the human factor in the organization. Human resources are a very important factor for achieving the goals of organizations. The specificity of human resources is reflected in the range of properties they possess in relation to material resources. Human resources, whose capacity is fully used in an adequate and constructive way, provide a synergistic effect, because the overall results of the work are greater than the individual. The attitude of the organization and its management towards employees has an impact that is of economic, health and social nature. Only renewal and development are particularly important features that human resources possess and which with the use, i.e. entering the work process are not devalued, but on the contrary are confirmed and increased. In the opinion of many experts in the field of human resource management, investing in their development and management is much more profitable than investing in any other type of resources, due to the fact that without human labor there is no possibility of creating surplus value.

The modern operation of organizations in a turbulent environment cannot be imagined without adequate production resources, and people with their abilities are one of those resources. The importance of human resources is reflected in the fact that they directly affect the efficiency of organizations, and thus the competitive advantage.

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employee management, which above all ensures the well-being of each employee, its positive development but also the development of the organization, and thus the society as a whole. The purpose of modern management is to predict the future and to create such a job where employees will give their best. Competitiveness that used to be built on the possession of specific resources, low costs, gives way to competitiveness based on knowledge possession and effective knowledge management. That is why modern organizations are increasingly directing their resources to education, continuous training of employees and management of their careers. The ability of people to learn and apply their knowledge is an indispensable resource for the organization and its enduring competitiveness. The key competencies of the employees are built through the learning process, which further emphasizes the importance of human resources as a lasting source of competitive advantage.

Unfortunately, it is concluded that not enough attention is paid to this issue in companies in our country and it is high time to make fundamental changes in the attitudes of managers involved in business activities towards a full appreciation of human potential. Only in that way R. Macedonia will move closer to economically developed countries.

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PERSONNEL PLANNING SEGMENT OF HUMAN RESOURCE MANAGEMENT

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Abstract
Human resource planning is a roadmap that describes how the organization will meet its current and future human resource needs based on the organization's strategic plans. Human resource planning is a key element in ensuring the success of the organization because it is a systematic process of reviewing and anticipating the need for human resources, in order to provide sufficient employees with the necessary skills and abilities to achieve the goals of the organization. Human resource planning provides the basis for human resource decisions in anticipation of future changes. The planning process deals not only with the projection of the workforce, but also helps in the planning of retirements, the planning of the succession, and becomes an important strategic function for the whole organization. This is necessary not only to achieve current goals and objectives, but also to create a competitive advantage.

Keywords: systematic process, strategic plans, human capital, organization
JEL Classification: O15

Introduction
Human resource planning can be a formal or informal process that should contribute not only to the efficient operation of the organization but also to the management of the organization in the future. The goal is to achieve optimal utilization of existing human resources and planning for future needs. The planning system identifies the developmental needs of individual workers so that they can be useful in the future.

Comparing current available human resources with future growth-based requirements, expansion plans, identifying skills and competencies, making decisions and developing future human resource management plans is a basic human resource planning process. The process takes into account all aspects of the workforce, including requirements for future employee skills and competencies.

Human resource planning provides the basis for human resource decisions in anticipation of future changes. The planning process deals not only with the projection of the workforce, but also helps in the planning of retirements, the planning of the succession, and becomes an important strategic function for the whole organization. This is necessary not only to achieve current goals and objectives, but also to create a competitive advantage.

The human resource planning system also helps to increase the efficiency of employees by providing opportunities such as transfers, rotations and promotions and also helps employees to clearly understand their role and responsibilities in order to achieve the goals of the organization.

Defining personnel planning
Human resource planning is the process of developing a strategy for regulating the number and capabilities of human resources in accordance with the needs of the organization. Planning helps the organization to attract, recruit, retain and optimize the distribution of staff needed to meet certain requirements and goals, and to respond to changes in the external

environment such as technology, competition and other similarities. It is usually defined as the process of anticipation and creating care for the movement of people in the organization, outside and inside the organization in order to provide the required number and structure of employees. (Savić, Aleksić, Grubić - Nešić, & Tot: 1998: 248).

In the process of human resource planning, the future of the organization should be taken into account, and the strategic plans of the entire organization should be taken into account. Human resource planning is a support to the strategic plans of the organization because it provides an answer to the question of whether the organization has the human resources with the necessary skills and knowledge to be able to realize the strategic plans. In this way, human resource planning is directly related to strategic planning.

In addition to aligning the planning process, the link between strategy and human resources also focuses on developing key competencies. These key competencies will help the organization gain an edge over its competitors and take advantage of this by learning faster than others in the industry.

Organizations in which the planning function is marginalized will sooner or later face a shortage of employees with an appropriate educational profile and serious difficulties in achieving the projected tasks and goals. The main purpose of human resource planning is a realistic assessment of where the organization is now, where it is going and whether it is equipped with appropriate "passengers", i.e. employees. There must be a system or knowledge, a real indicator that speaks to the strengths and weaknesses of the employees currently working in the organization, to build on the knowledge of "where is going" the organization can assess the competencies needed in the future and whether there is a mismatch between the current situation and future needs. (Tanasijević: 1999: 125-189. Nothing is done in isolation, because the planning of human resources must take place in accordance with the vision and strategy of the organization.

The role of top management in the planning process is:
• Defining organizational goals
• Approval of the human resources plan
• Correction of the human resources plan

The human resources department makes the human resources plan that should meet certain requirements, as follows:
• Defining the time period
• Coverage and details of the plan
• Clear and up-to-date information

The role of the human resources sector is to predict the supply and demand of labor that should be based on management assessments, statistics, job analysis, assessment of existing resources and the likelihood of reduction based on internal and external factors. As a result of all these activities, a human resources plan is prepared which should: (Cenzo: 2000: 145)
• Harmonized the projected supply and demand on the labor market
• Identify key areas
• Creating contingent plans (if-then)
• Assessment of the level of utilization of employees

Planning models can range from very sophisticated estimators even a decade in advance to very simple ones based on planned production or sales volumes. It is important to have

accurate forecasts of trends and market movements. Many organizations respond to change and economic hardship by reducing costs, which usually leads to staff reductions. As a result of the changes, certain processes may be abolished, as well as bureaucratic layers, and more attention should be paid to the necessary skills and knowledge that employees should have. Such reengineering can cause difficulties in human resource planning as it is usually followed by staff reductions.

In order to increase profits, employees are often treated as a number, an attitude that is present in many organizations, despite the fact that the loss of employees can have negative consequences for the organization, because it means an outflow of skills, knowledge that employees have acquired. his many years of work. Endangering productivity by reducing the number of employees can be detrimental to those who remain in the organization. The same applies to managers who, due to reduced development opportunities, become less loyal or "burn out". (Stanković: 2001: 256-267)

The difficulties faced by human resource managers arise primarily because human resource planning is seen as a product, ie a plan, and less as a process in which employees are treated as a significant input in the organization. Although plans are generally predictions, controls and interdependencies of certain processes and activities, it is necessary to see human resource planning as a continuous and uncertain process, and not as a specific product that should be strictly adhered to.

It is for this reason that working with people is a sensitive and complex process that is constantly changing, developing and upgrading. Therefore, planning can be said to be an activity that achieves the desired results in human resource management and should be a priority business strategy in organizations.

Human resource planning can be viewed from several aspects, the most important of which are:
- Planning for future needs - it comes down to planning the number and professional profile of people that the organization needs in the near or distant future
- Balancing planning - compares the number of required employees with the number of employees who are assumed to remain in the organization
- Planning the temporary or permanent dismissal of employees - is done in organizations where due to technical - technological progress, organizational changes and other reasons, there is a need for some employees to be declared redundant,'
- Outflow planning - refers to people who are retiring, those who will be absent for a long time, etc.
- Planning the hiring of new employees - refers to the number, structure and profile of persons to be hired and predicting the dynamics with which they should be employed
- Employee planning, training and development - means defining the conditions, programs and goals of the training as well as the people who will take care of its successful execution

Planning is considered one of the most important management activities, which is why it is considered an integral part of the overall planning activities of the organization.

Theoretical views of the personnel planning process
Given that the personnel planning process involves several stages; there are several theoretical views on which stages should be identified as the most important for the success of planning. According to Stangl, Susnar and Zimani, there are four significant interrelated activities: (Stanković: 2001: 96)

- o Talent inventory
- o Predicting the need for labor
- o Action plan
- o Control and evaluation

Other authors, Todorović and subordinates, State that the key elements on which the personnel planning process should be based are: (Todorović, Đuričin, Janošević: 2002: 586)
- o Elements for the future growth and development of the organization that should arise from the development policy, growth strategy (directions, methods and pace of growth), as well as from the set of individual business plans developed after the time of execution
- o Elements for the current state of the qualification structure and degree of utilization of the available work fund
- o Elements on the basis of which the future requirements will be assessed in terms of number and type of qualifications, which is performing analytical assessment of work and assessment of work productivity taking into account the indicators of technical development and directions of future growth of the organization
- o Overview of the number and types of missing staff, which is expressed in terms of the current situation and assessed future needs
- o Insight into the staff that the organization provides scholarships or is receiving additional training
- o Data on the number and type of staff from current employees who have acquired conditions for promotion, as well as data on those who are expected to leave the organization due to retirement and the like.
- o The condition and tendency in the development of educational institutions for individual profiles of staff and the length of their education
- o Data on the development plans of the economy and especially of the industry to which the organization belongs
- o Projections for the movement of the social standard

On the other hand, some authors Beardwell, Holden and Claydon, believe that the process of personnel planning can be observed through research and analysis, forecasting, planning and implementation and control. (Beardwell, Holden, Claydon: 2003: 160)

There is also a theoretical view of personnel planning according to Jackson, Schuler and Werner, which explains that there are only three phases: scanning and assessing the environment, determining the goal that should be achieved with certain human resource activities and the measures used to assess the achievement of those goals, and to develop concrete plans for human resources as well as a timetable for their implementation.

In addition to identifying the specific phases in the personnel planning process, Jackson and Schuler state that a very important aspect is the time dimension in which the planning is performed, i.e. short-term, medium-term and long-term human resource planning. (Jackson, Schuler, & Werner: 2004: 259) The reasons for this complex personnel planning process are that planning according to Hellreigel and Slocum increases the organization's advantage by employing the right people, develops a clear vision of goals, and increases the ability of the organization to adapt to changes in the business environment. (Hellreigel, Slocum: 2005: 322)

From the above concepts for human resource planning it can be concluded that, no matter how differently interpreted, they all indicate a complex activity that:
- •   It involves analytical work through detailed stages

•   It is related to strategic planning, and thus is part of the strategic management of the organization
•   Greatly affects the achievement of organizational goals, the achieved performance of the organization - on the basis of which can be linked the impact of the success of the organization and competitive advantage in modern operating conditions.
•   Personnel planning must take place in accordance with the vision and strategy of the organization, in order to timely provide staff necessary for future business activities. The approach to human resource planning is different; we can talk about the existence of two models of personnel planning:
•   Traditional personnel planning model and
•   Integrated personnel planning model

The traditional personnel planning model is a model in which the emphasis is on the balance between the projected supply and demand of labor, in order to ensure the right number of real workers, in the right place at the right time. The integrated personnel planning model unites all aspects of planning, including the traditional model.

Phases and activities of human resource planning
Organizations that effectively plan human resources also increase their chances of improving business results. The main goal of planning is to timely provide the necessary human resources for future business activities. There are four stages in the human resource planning process:
•   Collection of data on the internal and external environment
•   Forecasting the supply and demand of human resources
•   Harmonizing the supply and demand of human resources
•   Monitoring, evaluation and correction of the plan

The first stage in the planning process is the collection of data on the internal and external environment. Data collection is performed for the purpose of recognizing and identifying the key factors of the environment, i.e. the factors that can have an appropriate impact on human resources and the management system.

Regarding the external factors, data are collected on the existing conditions and expectations regarding the work, relevant technologies, information on the competition, the labor market situation, the legislation in the field of work and labor relations. Planners must be aware of labor market conditions such as the unemployment rate, available skills, age and gender structure of staff. Planners must also be aware of the laws and other regulations that directly regulate the matter of staffing. (Florida: 2006: 229-240)

At the same time, data are collected on the factors of the internal environment such as strategic and business plans, current employment, the rate of labor fluctuation, the rate of leaving the organization. The assessments given when considering certain factors in the external environment are also of great importance.

The second stage in the human resource planning process is the forecasting of labor supply and demand. This should answer the questions, how many people and with what qualifications does the organization need to realize its business plan and whether it has those tubs or has to look for them from outside.

Qualitative and quantitative methods can be used in forecasting. Qualitative methods are suitable for small organizations and organizations that are new to planning activities, while quantitative methods rely on available data and the application of mathematical methods and

models without the use of subjective estimates. Qualitative methods for predicting labor supply are: Delphi technique (Bohlander, & Snell: 2007: 63-64) and normal group technique. While in the quantitative methods for forecasting the demand is: averages, exponential functions, trend projections, regression, linear programming, actuarial models, simulations, probability matrices and the like. A particularly important method is considered the succession plan which refers to the plans made by the organization in order to fill the most important positions in management. This allows individuals' careers to be planned and managed in a way that best suits the organization and ambitions of those individuals. (Dessler: 2008: 74)

The third stage in the planning process is the harmonization of labor supply and demand. The projected supply and demand should be analyzed to determine if they are balanced. In conditions of balance does not mean that the permanent staffing status does not need to change, but that the future situation requires the same number of employees but different qualification structure of employees, or the future situation requires the same number but different employee profiles and the like. If there is no balance, it is necessary to determine how it manifests itself - as a surplus or as a deficit. If there is a surplus, a number of measures can be taken in the organizations such as:
•   Stimulating earlier retirement,
•   Non-filling of vacancies,
•   Redesign of jobs with redundant employees,
•   Reduction of the number of working hours and the like

The organization must respond in a timely manner, so that the existing resources are used rationally, and what measure will be taken depends on the assessment and the specific situation in the organization, but in order to do it in the best and painless way. If there is a shortage of labor, the following activities are usually envisaged in the organization:
•   Employment of new persons full-time and indefinitely
•   Incentives and other benefits for employees not to retire
•   Employment of part-time retirees
•   Measures to reduce employee turnover
•   retraining and retraining of employees
•   Organizing overtime work and the similarities.

Which measure will be taken again depends on the specific situation and the assessment of the management, but it should not be contrary to the economic interests of the organization. For example, for relatively short periods of increased demand, it is better for employers to pay for overtime work than to hire new staff. Paying for overtime work is usually more economical than hiring new staff to train them and providing benefits for them. Alternatively, employers may transfer some of the work to another company or hire staff on a temporary basis.

The fourth stage in the human resource planning process is monitoring, evaluation and correction of plans. No plan is perfect and flawless though the people involved in their preparation should strive to make the plans realistic and achievable. Of course, mistakes and omissions are possible, because it is not easy to predict in advance what will happen in the planned period.

The planning process does not end with the adoption of the plan, it is necessary to continuously monitor its implementation. Given that the business environment is more and more uncertain and very changeable, it is often necessary to make possible corrections to the plan if such unforeseen situations occur. If the reality deviates significantly from the planned predictions, the plan can be changed and supplemented, everything that is not good should be changed.

Human resource planning is a timely response to change, especially in situations of introduction of new technology, expansion and increase of workload due to synchronized provision of employees with appropriate skills and knowledge. Planning can reduce the rate of employee turnover, which is often caused by the lack of long-term plans for development and advancement of employees in the organization, which can lead to the loss of valuable professionals. (Kulić: 2009: 355-396)

Human resource planning involves a range of integrated planning activities:
•   Determining the required number of employees - quantitative plans
•   Determining the required structure of employees - quality plans
•   Determining the necessary activities for human resource development - planning educational activities, relocations and changing the structure of work, career, etc.
•   Determining the need for new employees and sources of recruitment - a plan for providing the necessary human resources for the future activity of the organization and
•   Determining the possible needs for reducing the number of employees in the organization

The bases for human resource planning are the development plans and goals as well as the strategic plans of the organization. The planning starts from the current situation and anticipates the changes in the scope and type of work, which allows anticipating the future needs of human resources. Certain information systems can also be used in planning to model the effects of group size changes as well as the transfer of employees from one team to another. Within such models, the organization is viewed as a system of workers, consisting of departments and streams.

Staffing plan and time horizon of planning
The purpose of human resource planning largely depends on the organization and the environment in which it operates, but the general goals can be listed as follows:
1.   Attracting and retaining staff with appropriate skills and competencies needed by the organization
2.   Predicting problems related to potential downtime or staff shortages
3.   Development of well-trained and flexible staff which increases the ability of the organization to adapt to the uncertain and changing environment
4.   Reduce the organization's dependence on the external environment, when key skills can be provided internally, by retaining and developing current employees
5.   Better utilization of employees by introducing flexible work systems and more.
Staff planning is done for each calendar year and changes can be made during the year based on new information.

Organizations in which the human resource planning function is in its infancy usually plan for the short term - one year in advance with a special emphasis on the need for recruitment. Organizations with more experience in staff planning and with more complex needs can plan in the medium term - two to three years in advance. Some organizations have long-term planning - more than three years in advance.

The time period of planning and the uncertainty of the environment are highly interrelated. The greater the uncertainty, the shorter the useful planning period and vice versa.
Regardless of the complexity, the HR plan should answer the following questions:
1.   What specific skills do permanent employees have?
2.   How many current employees will remain in the organization?
3.   What things currently exist?
4.   What changes will occur in the work

5.   What is the potential of employees for advancement?
6.   What skills must employees have in the future?
7.   How many and which people will be needed in the future
8.   What things will exist in the future?
9.   How should the policy and practice in the company be changed in order to be in line with the future personnel requirements?
10.   Where in the future the organization will find future employees

The human resources plan contains:

☐   Employment plan from external sources with number, qualification structure, period of employment and the organizational part where the new employees will be employed
☐   Training and education plan with number, type of educational activities, dynamics and budget for those purposes
☐   Development plan and career directions of existing employees
☐   Plan for redundancy and how to solve this problem
☐   The plan, as the word itself says, is a product of the planning process, more precisely a draft according to which the planning process is realized.
Responsibility in human resource planning has managers at all levels, marketing department, human resources department in the organization. Monitoring and controlling employee turnover can be done through computational models to gain important input for decision-making in other areas of human resources, such as recruitment, promotion, relocation, training and career planning. . (Jelčić: 2010: 187-235)

Personnel planning and strategic planning
Strategic planning can be defined as the process of identifying long-term organizational goals and the actions needed to achieve those goals. Therefore, it is necessary to specifically analyze areas such as finance, marketing and human resources, in order to determine the capacity of the organization to achieve those goals.

The strategic planning process should define changes in the scope and types of activities of the organization. After defining these changes, it is possible to identify the competencies that the organization needs to achieve its goals, and thus the necessary skills. Human resource planning is related to strategic business plans in terms of the people needed to make those plans come true. What can influence the business strategy is the emphasis on the direction in which human resources should be developed, in order to be effective in achieving business goals, as well as in anticipating the problems that may arise, which should be solved in future, to enable the people who are needed to be available and able to contribute. Human resource management is a decision-making process that combines three important activities:
•   Identifying and reaching the right number of people with the right skills
•   Motivate them to achieve high performance
•   Creating interactive links between business goals and people planning activities

In situations where there is no clear business strategy, the planning process may focus on specific areas within the organization where it is possible to anticipate future staffing requirements in terms of numbers and skills. An adequate number of talented people in the organization can help it create and maintain a competitive advantage.

Organizations must build employees who will adapt to the specialized needs of the organization. In that case, a longer period of time is required, but organizations can "buy" human resources, rather than "Develop" them internally. Namely, if there is a need for staff with specific skills (due to the development of a new product or appearance in new markets), it is difficult for them to develop quickly internally.

Human resource planning can begin after defining the organization's business strategy and setting strategic goals. Strategic planning is aimed at a longer period of time (10 years in the future), where there is a danger that the management of the organization will be oriented to its plan without taking into account the current state of the environment. Because of this, strategic planning turns into tactical, medium-term and annual, which is close to the present and represents a concrete effort of the organization for the current period.

At every level of planning, from strategic to tactical to operational, human resource management also performs planning, as a process that is builds on the levels of business planning. Namely, at the strategic level, the personnel planning implies perception of the external factors that affect the organization, what are the needs of the organization for personnel and how the management influences the future work. On the other hand, the tactical level of personnel planning goes deeper into the analysis and predicts the personnel requirements for a certain period of time. This part of the personnel planning predicts the number of employees needed for certain business activities defined by the tactical business plans. The last level of planning, the operational, from the aspect of human resource planning, implies the application of human resource management, ie. Development of action plans, through which all staffing activities will be implemented through training, and development, performance measurements and compensation, to organizational change management where different human resource strategies are defined to mitigate the effects of change.

Emphasizing the importance of people for organizational success, ie in general, the scientific activity with the "human side" of the organization and management is not something new. Relatively new is the real practical interest of companies for human resources and their development and their management as a vital interest not only for the development and success of operations, but also the very survival of the company. (Koteski, C., Jakovlev, Z., Josheski, D., 2013)

Conclusion
From the above it can be concluded that human resource planning and business planning are in a relationship of interdependence. On the one hand, human resource planning as a process occurs when managers have a clear picture of what the organization is aiming for, where it is going, and which path. By analyzing and reviewing the strategic goals, policies and directions of growth and development, as well as the specific business programs with the annual financial plans and monitoring and control systems, the human resources management can create action plans and implement staffing activities, trainings. , measuring performance and compensation, in order to enable smooth, accurate and timely achievement of tasks and goals that are set at strategic, operational and tactical level.

On the other hand, by measuring the performance of employees and achieving goals in a certain period of time, human resource management is a feedback to the management of the company. Namely, with the analysis of the achieved results, the satisfaction of the employees and the organization of the work in general, as well as the contribution of the employees for achieving the goals of the organization, the management comes to data that should be followed when compiling the plans for the next period. The human resources management is in charge of analyzing the personnel plans and their realization, to provide data that will be a guide for the next period of time and mitigating the consequences of those changes. Human resource management refers to all aspects of hiring and managing employees in the organization. Covers activities from strategic human resource management, human capital management, corporate and social responsibility, organizational development, resources (workforce, planning, recruitment and selection and talent management), learning and

development, performance and reward management, relationships with employees, employee well-being and employee service delivery. Human resource management also has an international dimension.

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EU CARBON BORDER ADJUSTMENT MECHANISM: OPPORTUNITIES AND CHALLENGES

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Abstract
The European Union plans to introduce a levy on greenhouse gases emitted during the production of goods and services that will be imported into the Single Market. The European Commission presented the Carbon Border Adjustment Mechanism (CBAM) in July 2021. Respect of the principle of the most-favorite nation and the principle of national treatment are crucial for its WTO compliance. The introduced measures must not represent arbitrary or unjustifiable discrimination. The CBAM should ensure a level playing field in the EU Single Market and protect the products and services of European companies from unfair competition from imported products and services for which no or lower level of levy has been paid on greenhouse gas emissions. Proper implementation of this mechanism will contribute to reducing greenhouse gas emissions and will also stimulate the development and introduction of new cleaner technologies globally. The European Union, through the CBAM intends to encourage other countries to introduce mechanisms similar to those contained in the European Green Deal.

Keywords: Carbon Border Adjustment Mechanism, climate change, greenhouse gases, EU, WTO, border measures
JEL Classification: F420; F130; F150; O330; Q540

Introduction
The European Commission (2021a) presented the European Green Deal on July 14, 2021. This comprehensive plan contains a number of measures and instruments aimed at reducing greenhouse gas emissions by 55% by 2030 compared to 1990 levels, and to make Europe climate neutral by 2050. The European Green Deal is the most comprehensive climate plan adopted by any country or group of countries. The European Green Deal contains 14 areas that aim to "create the right balance of policy measures and revenues generated to design and drive a just and transformational change across the EU economy." (European Commission 2021a p.1).

This package contains two instruments that are introducing direct financial obligations for the private sector. These are the Emission Trading System (ETS) and the Carbon Border Adjustment Mechanism (CBAM), aiming to reduce greenhouse gas emissions, to stimulate the private sector to introduce new technological solutions that will reduce those emissions, but also to generate revenues in the EU budget, that would be further invested in projects related to achieving the goals of the European Green Deal. The EU ETS was introduced in 2005 and covers sectors that emit about 45% of total greenhouse gases and aims to reduce their emissions. The European Commission is determining the total amount allowances for the greenhouse gases that can be emitted by European companies in the sectors covered by the ETS. Gradual decrease of greenhouse allowances is implemented by ETS too. The allowances are then allocated to Member States, that are responsible for their distribution to the producers. The allowances have so far been distributed free of charge, but the companies that need additional allowances buy them on the secondary market from the companies that had lower emissions and haven't used all of their certificates. The European Commission plans to start gradually charging for the allowances after 2025. European companies will be

paying 10% of the price in the first year, 20% in the second and so on until the 10th year, ie 2035 when the full price should be paid.

Figure 1. Elements of the European Green Deal

Source: European Commission: Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality. Brussels: EC, COM(2021) 550 final, 14.7.2021 p.13

Electricity, the cost of which is included in the total expenses of each product, can be used as an illustration of the impact of greenhouse gas emission charges. The electricity price is especially important for goods that are produced by technological processes that have intensive electricity use. If in a country electricity is generated from fossil fuels and doesn't have requirement for purchasing of the greenhouse allowances, the price of electricity is lower than in countries where such allowances have to be purchased. The price will increase further if the electricity is from renewable energy sources, which are more expensive than electricity generated from coal. Producers in countries where such levies are paid will have much higher electricity costs and will be less competitive. This will create unfair competition between companies that do not pay for allowances and companies operating in countries where such levies are paid. Therefore, the European Union needs to protect European companies from unfair competition coming from the imported goods originating from the countries where there is no such levy.

To reduce such negative effects, the European Commission (2021a) plans to introduce a Carbon Border Adjustment Mechanism (CBAM), which should provide protection from unfair competition, but also prevent relocation of installations to countries with less ambitious climate policies. The European Commission through this mechanism plans to introduce an obligation for importers to purchase allowances for greenhouse gas emission occurred in the production process of goods imported into the Single Market. The purpose of the CBAM is to ensure an equal level playing field on the European If the EU does not introduce such a mechanism, its

domestic producers, who will be paying for the allowances for greenhouse gas emissions will be discriminated. The EU position is that the CBAM promotes fair competition.

Furthermore, the absence of such a mechanism will not only impact the competitiveness of European companies, but will also negatively affect the accomplishment of global climate goals. Instead investing in R&D in technologies that will reduce emissions, companies might opt to relocate their facilities to countries where there is no such regulation. Relocation could even increase level of global greenhouse gas emissions if production capacity moves from a country where electricity is generated from cleaner energy sources (such as renewable or nuclear energy) to countries where it is generated from coal. The goal of the European Green Deal is not only to reduce greenhouse gas emissions in the EU, but also globally.

In the EU ETS and CBAM regulation the term carbon tax or customs duty is not used. Instead, the term allowance for greenhouse gas emission is used. Although the two mechanisms have financial implications, the European Commission does not consider them as a tax or customs duty, but as a measure of the economic policy. This terminology is a because of the internal procedures in the EU. The introduction of a measure as a carbon tax requires a unanimous vote in the Council, which at the time of the adoption of the ETS was difficult to be achieved, because there was no unity among EU members on this issue. To avoid possible blockage, this policy measure was named as an allowance. If the measure contained in the CBAM is named as customs duty, the EU internal procedure for its adoption requires a qualified majority, which will be easily achieved, but measure with such title will be non-compliant with the EU obligations regarding the maximum level of customs and other duties contained in the Schedule of Concessions of the European Union in WTO.

Therefore, the European Commission does not define the obligation to purchase allowances as a fiscal measure (tax or custom duty) but as a measure of the economic policy aimed at reducing greenhouse gas emissions.

Sectors covered in the initial phase of CBAM
CBAM will initially apply to imports of goods whose production has a significant greenhouse gas emission. When selecting the sectors for which such a measure will be introduced, the administrative feasibility was considered too.

According to the European Commission (2021b) the carbon border adjustment mechanism will start to be implemented on 1.1.2026 and will apply to the following products:
- cement
- iron and steel
- aluminum
- fertilizers
- electric energy

It could be noted that crude oil and natural gas are not included although they significantly contribute to greenhouse gas emissions. The EU didn't want to increase the price of these energy sources, in order not to provoke protests, such as the "Yellow Vests" riots in France, which were the result of rising energy prices.

However in the future it should be expected an expansion of the range of products that will be covered by BCAM, including crude oil and natural gas. The European Commission has announced that it will assess after the end of the transition period whether it will expand the range of more products and services and whether it will include so-called "indirect" used greenhouse emission for the production of imported goods (a downstream approach). Also,

the free allowances will be gradually abolished, which will increase the burden on the exporters on the European market.

CBAM compliance with WTO regulations
The idea of introducing a customs duty on greenhouse gas emissions is not new and has long been discussed as a possible mechanism for achieving global sustainability (Moghaddam, F. R. et al. 2013 p.375).

In addition to the technical/methodological parameters related to the determination of the amount of greenhouse gases emitted and the price per metric ton, one of the issues discussed is the compliance of the CBAM with the regulations administered by the World Trade Organization (WTO). Arguments for justification for the introduction of such measures are contained in **Article XX:b of GATT'47 which allows the introduction of measures "necessary to protect human, animal or plant life or health**". In addition, the measures of CBAM need to ensure respect for the principle of the **Most-favored-nation treatment (**Article I:1 of GATT'47), the principle of **National treatment** (Article III of GATT'47) and the imposed levy **not to be arbitrary or unjustifiable high** (Article X of GATT'47).

The European Commission needs to prepare the legislation for implementation of the proposed CBAM, that will enter into force on 1.1.2026. Once the detailed regulation is adopted it will be possible to give a more accurate assessment of their compliance with the WTO rules. One of the key requirements that need be met is respect of the principle of the **Most-favored-nation treatment** is that "any advantage, favor, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties" (Article I:1 of GATT'47). This in practice means that it is not allowed to discriminate between the same or like products originating from different countries. According to Bacchus (2021) the different treatment of the same or like products based on their carbon content originating from different WTO member countries is a violation of the Most-favored-nation treatment. Namely with the introduction of the CBAM there will be discrimination between products from different WTO member states, as a result of differences in climate policies between those countries, the amount of greenhouse gases emissions and the prices of allowances. Those differences will create different treatment of the imports from WTO members. EU importers might have to pay different amount for the allowances for imported goods based on the how the emission of greenhouse gases is treated in the country of origin of the imported goods. It is also possible that the levy for the same or like product is different between two manufacturers in the same country, depending on the actual amount of greenhouse emissions. Namely, if it is determined that for the same or like product, for example, a ton of steel, different amounts of greenhouse gases are emitted, then the levies to be paid will be different. European WTO regulators believe that there is no discrimination between different WTO members, although at first glance, one gets the impression that the same or like products from different countries and different manufacturers are treated differently. Namely, the European Commission position is that the products, regardless of the country of origin, will be treated equally, ie the total levy paid for the allowance will be equivalent to the amount of greenhouse gases emitted. This ensures equal treatment, regardless of the origin of the product.

The CBAM must also comply with the **National treatment principle** (Article III: 2 of GATT'47), which requires contracting parties to treat "the products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied,

directly or indirectly, to like domestic products". In order to ensure equal treatment of foreign and domestic products, it is necessary for the allowances in the ETS to be equal to those in the CBAM, ie the levies for imported and domestic products should be equal. The fact that such a levy will apply to both domestic and foreign goods can be used as an argument that this mechanism is in line with the WTO National treatment principle. However, in order this measure to be fully in compliance with WTO, it will be necessary the fiscal burden on domestic and foreign goods to be equal. It is also required to determine the actual greenhouse gases emissions for the imported products as well as the equal charge for the allowance per metric ton of CO_2 equivalent. European legal experts consider that ETS and CBAM are harmonized and thus ensure equal treatment of domestic and imported goods.

In order CBAM to be fully in conformity with WTO, it is necessary to **comply with Article XX of GATT'47,** according to which "measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination". This means that the levies related to this mechanism must not present an unjustified financial burden and should not have a negative impact on the volume of imports.

Some legal experts (Bacchus, 2021 p.3) disagree with the European Commission's position that the CBAM levies are not a fiscal instrument, but an economic policy measure. The purchase of allowances for imported goods, according to these legal experts, fall into the category of customs duties and other charges and their introduction will exceed the level of ceilings contained in the WTO Schedules of Concessions of the European Union. This will be breach of the obligations stipulated in the Article II:1 of GATT'47. On the other hand, European legal experts have a position that such a measure is not a customs duty and therefore the introduction of CBAM will not breach the commitments of the EU. But it would not be a surprise if some WTO members did not accept such an interpretation and use the WTO dispute settlement mechanism to prove that CBAM is not in compliance with WTO.

The United States, Canada, Japan, China, India, Brazil, South Africa, including the least developed countries, have already expressed concern about the EU's introduction of CBAM. There is fear that CBAM could be used as a protectionist tool against foreign competition.

According to initial estimates, Russia, China, Turkey, Great Britain, Ukraine, South Korea, India, Serbia the United States and UAE will be most affected by the introduction of such measures.

Table 1: Top 10 sources of EU imports of CBAM goods, by source country, 2020

	Total EU goods imports (millions of dollars)	CBAM goods	
		Total EU imports of CBAM goods (millions of dollars)	Percent of total EU goods imports
Russia	116.558	8.576	7,4%
China	471.218	5.635	1,2%
Turkey	76.619	5.401	7,0%
United Kingdom	205.541	5.401	2,6%
Ukraine	20.178	3.183	15,8%
South Korea	54.115	2.931	5,4%
India	40.521	2.780	6,9%
Serbia	13.160	1.434	10,9%
United States	248.976	1.394	0,6%

United Arab Emirates	10.610	1.082	10,2%
Total	1.257.496	37.817	3,0%

Note: Exchange rate applied is as of December 31, 2020 (€1=$1.2271)
Source: Gary Clyde Hufbauer, Jisun Kim, and Jeffrey J. Schott: Can EU Carbon Border Adjustment Measures Propel WTO Climate Talks? Washington: Peterson Institute for International Economics, 2021 p.6

The European Union prefers adoption of the international instrument that will define the rules in international trade dealing with the reduction of greenhouse gas emissions. If no consensus is reached by 2026 on amending WTO-administered regulation to provide a clear legal basis for introducing such a mechanism, it should be expected that some WTO member states will initiate proceedings before the WTO Appellate Body. Certain bilateral measures could be triggered too, as a response to the implementation of the CBAM. Those bilateral measures will target the EU export.

Determination of the levies on the greenhouse gas emission contained in the imported products
The amount of the levies will depend on the amount of greenhouse gases emitted in tons of CO_2 equivalent (CO_{2e}) and the price per metric ton of CO_{2e}.

$$BL = Q_{CO2e} \times Pmtco_{2e}$$

BL - border levy
Q_{CO2e} – quantity of emitted greenhouse gases expressed in CO_{2e}
$Pmtco_{2e}$ - price of metric ton of CO_{2e}

The first element for calculating of this levy is the quantity **of emitted greenhouse gases expressed in CO_{2e}**. It is complex task. The production of the same product (for example 1 ton of cement) can emit different quantity of greenhouse gases depending on the technology, production process, row materials and energy used. In order to determine the quantity correctly, it is necessary to use a methodology that will calculate the **actual greenhouse gas emissions**. At the moment the EU ETS does not implement such a methodology. The emissions per unit of product are equal for all producers, regardless of the actual greenhouse gas emissions. In practice this means that all manufacturers for one ton of cement steel should have the same number of allowances, regardless the actual greenhouse gas emissions. The verification of the quantity of emissions of the greenhouse gases is a complicated process and opens up possibilities for different interpretations.

The proposed CBAM outlines three methodologies for determining the quantity of greenhouse gases emission (European Commission 2021b Annex III). The first methodology that is preferred is based on **actual greenhouse gases emissions** generated during the production of imported products. However, in order to be able to use this method it is necessary the installation to be included in the CBAM database. The exporting country should establish a body that will be in charge of verifying the data and monitoring the greenhouse gas emissions. Determining the actual greenhouse gas emissions will have a large positive environmental impact and will contribute to fair competition. In the first phase of CBEM, which includes raw materials, their semi-finished products and electricity, this methodology could be more easily implemented, but in later stages when the products that contain indirect emissions (so called downstream emissions), the implementation will be more complex, will require highly complex data and will be more difficult to be administered.
The second methodology for determining the quantity of emitted greenhouse gases is based on the **default value** calculated **based on data from third sources or the literature**. The

importers will face the situations when they pay for smaller or higher quantities of greenhouse gases than the actual. However the implementation of this methodology is simpler and the administrative costs are lower. The downside is that this methodology might allow the leakage and could create uneven playing field.

The third option for determining the quantity of emitted greenhouse gases will be used when there is no data on the current emission, nor data from secondary sources. The **default value** of greenhouse gas emissions will be determined **based on the 10% worst performing EU installations**. This methodology is not providing incentives for the producers to reduce the greenhouse gas emissions and could be arbitrary and be seen as discrimination practice.

The second element for just calculation of CBAM levy on the greenhouse gas emission for the imported products is the **price of allowance for emission of one metric ton of CO_{2e}**. In order CBAM to comply with WTO regulations this price should be equal to that paid by European companies. The CBAM should replicate the ETS, and the only difference between the two mechanisms should be that the ETS allowances will be purchased by European producers, while the CBAM allowances will be bought by importers. The European Union plans to set the price of allowances in the CBAM on the basis of the weekly average auction price through the ETS for European manufacturers.

But here are some challenges that need to be overcome by 1.1.2026 when the CBAM will be implemented. Namely, on April 1, 2021, only 19 countries on the European continent had introduced greenhouse gas emission allowances, but the price varies greatly from country to country, ranging from 0.07 euros per ton of CO_{2e} in Poland to 116.33 euros in Sweden.

Table 2: Carbon Tax Rates, Share of Covered Greenhouse Emissions, and Year of Implementation (as of 2019)

	Carbon Tax Rate (per ton of CO_{2e})	Share of Jurisdiction's Greenhouse Gas Emissions Covered	Year of Implementation
Denmark (DK)	€23.78	35%	1992
Estonia (EE)	€ 2.00	6%	2000
Finland (FI)	€62.00	36%	1990
France (FR)	€45.00	35%	2014
Iceland (IS)	€29.72	55%	2010
Ireland (IE)	€33.50	49%	2010
Latvia (LV)	€12.00	3%	2004
Liechtenstein (LI)	€85.76	26%	2008
Luxembourg (LU)	€20.00	65%	2021
Netherlands (NL)	€30.00	12%	2021
Norway (NO)	€58.59	66%	1991
Poland (PL)	€0.07	4%	1990
Portugal (PT)	€24.00	29%	2015
Slovenia (SI)	€17.30	50%	1996
Spain (ES)	€15.00	3%	2014
Sweden (SE)	€116.33	40%	1991
Switzerland (CH)	€85.76	33%	2008
Ukraine (UA)	€0.25	71%	2011
United Kingdom (GB)	€21.23	23%	2013

	€35.91	34%	

Source: Tax Foundation https://taxfoundation.org/carbon-taxes-in-europe-2021/ (accessed on 3.3.2022)

The European Union needs to reform this system by 2026. Firstly, it is necessary all EU member states to be included in ETS, the price should be harmonized (to be equal for all countries) and thirdly, all greenhouse gases should be included and their conversion into metric tone of CO_2 equivalent should be defined. The large differences that exist, not only represent an obstacle to the correct determination of this levy on goods impored into the Union, but could also make distortions within the Single Market. European companies could relocate production to EU member states that have much lower price for allowances. At the moment, the possibilities for such distortions are minimal because the allowances are free of charge, and only small quantities are traded on the secondary market.

The European Commission also needs to decide how will treat the difference between the official price per tone CO_{2e} and the price on the secondary market. Companies that have surplus the allowances can sell them to companies that need them. The price per ton of emitted CO_{2e} on the secondary market on April 5, 2022 was 80.69 euros (https://carboncredits.com, accessed on 5.4.2022). If this price is compared to the average price of allowances of EU member states which is 35.91 euros (Tax Foundation accessed on 3.3.2022) it can be noted that the difference is quite large. The difference between the official prices and those on the secondary market may provoke reactions from European companies that lack allowances and are buying them on the secondary market at a much higher price. Namely, they can complain about the fact that the importers of foreign products are paying lower prices for their allowances and that domestic producers are discriminated.

Figure 2. EU Carbon Permits

Source: Trading Economics, https://tradingeconomics.com/commodity/carbon (accessed 12.04.2022)

An additional challenge are the different international prices per ton of carbon dioxide equivalent (CO_{2e}). Namely, the differences of the market prices for the allowances in the

different countries are huge. As can be seen from Table 3, these differences range from 1: 4. This means that the producers of certain goods will pay different prices depending on where the goods were produced. This is discrimination, according to the principle of the most favored nation, which requires all countries to be treated equally. The European Commission should answer how it will treat products that have paid for greenhouse gas emissions, but at much lower prices than European ones.

Table 3. Price of 1 ton of CO_2 equivalent emission

Carbon Prices	5.4.2022
European Union	€80.16
California	$30.83
Australia	$30.50
New Zealand	$76.05
South Korea	$17.23

Source: https://carboncredits.com/?sl=carbon-credits-home-ad&gclid=EAIaIQobChMIluPp_enu9QIVZfTjBx022AYAEAMYAyAAEgI9UvD_BwE, accessed on 5.4.2022

The European Commission, in order to create a level playing field and to avoid discrimination between countries, has taken approach that if the producers prove that they have already paid for the allowance for carbon emission in their country, the levy to be paid in the EU will be reduced in equal amount that they have already paid in their own country.

There is also a second option that is best for the EU, and that is to achieve harmonization of official prices for greenhouse gas emissions globally. But at this point no consensus can be reached on the obligation to implement a greenhouse gas emission levy. Price harmonization can be on the agenda of international negotiations only after the basic regulation for the establishment of such border mechanisms is adopted.

The transition period for the implementation of CBAM and administrative procedures
The European Green Deal envisages a transition period until 1.1.2026, when it will start charging for allowances for imported products. The first phase will start on 1.1.2023 and will last until 31.12.2025. During this period, importers will have to report the greenhouse gas emissions for the imported goods that are part of CBAM and will not be obliged to buy allowances. Some countries might decide to introduce similar instruments or mechanisms within their economic policy in order to reduce the impact or eliminate the introduction of such levies for their companies. The European Commission will provide technical assistance to the least developed and developing countries that will support their transition.

The mechanism of distribution of allowances for emitted greenhouse gases for imported goods, from an administrative point of view, will be big challenge. First European Commission needs to determine the amount of allowances for greenhouse gases for the imported goods at the global level. Next step is the geographical allocation of the allowances based on the origin of the imported goods. This phase is extremely important. The process should not have the characteristics of a quantitative restriction on imports, and should not create unjustified discrimination among countries that will result in restriction of their exports to the EU due to the lack of allowances. Inadequate implementation of this process can contribute to the restriction of imports, discrimination, and different treatment of exporting countries.
CBAM stipulates obligation importers to declare the amount of allowances that are used in the previous calendar year by May 31 of the current year and if there are not used allowances

they should be returned. The legitimate question is what will happen if an importer who bought such allowances didn't use them with aim restrict imports and gain benefits from limited quantities of goods on the market. The damage caused to the exporters due to the lack of allowances can not be compensated, and therefore is big concern that the CBAM can be used as mechanism for unjustifiable "green protectionism".

An additional challenge is the complexity and cost associated with administering the CBAM. Additional burden on imports will be the result of technical and administrative procedures related to monitoring, reporting and verification of emissions embedded in imported products.

Other international implications of the introduction of CBAM
One of the challenges that the European Union will face internationally will be the reaction related to the allocation of revenues from the allowances for the imported goods. Namely, if the exporting country has a price that is equivalent to the EU price, then the revenues from such measure go to the budget of the exporting country. The other extreme is if the exporting country has not introduced such a measure, then the entire revenue from the allowances will go to the EU budget. If the exporting country has a price for greenhouse gas emissions that is lower than the European one, then part of the revenues will go to the budget of the exporting country, and the difference to the EU budget. This will be politically very unpopular with the least developed and developing countries, which actually have much lower greenhouse gas emissions than the developed countries, and are therefore less responsible for the climate change. It is practice that developed countries to provide support and assistance to the less developed countries to become more integrated in international trade. In order to support this process, the EU has given the least developed and most of the developing countries a differential and preferential status, ie the import into the EU of goods originating from these countries is duty free. Europe needs to find a mechanism to use the revenues collected for goods imported from these countries through CBAM to be invested in projects that will support the transition and implementation of more clean in these countries. That will be in line with goal of EU to reduce emissions on global level.

The ambitious plan to reduce greenhouse gases poses another challenge for European companies. For example, if an aluminum producer from country "A" does not pay a levy for emissions, and a manufacturer from country "B" that is an EU member, pays such a levy, an has increased costs, and therefore may not be competitive with the manufacturer from country "A". One of the solutions could be to reimburse such levies on exported products, but it will be in contradiction with the spirit of the European Green Deal, which aims to stimulate companies to reduce greenhouse gas emissions globally.

The best solution that a similar mechanism is introduced globally. Therefore should be expected the EU to initiate and pursue intensive diplomatic activities for adoption of an international regulation in this area.

Conclusion
The Carbon Border Adjustment Mechanism (CBAM) is a significant step forward, and is the first mechanism implemented to create fair competition between goods originating in countries where greenhouse gas emission levies have been implemented and goods originating from the countries where such levy doesn't not exist. This mechanism, if properly implemented, will contribute to achieving targets for reduction of the greenhouse emissions on the global level. The most ideal solution would adopting international regulation, under the auspices of the WTO, which would define the rules for the introduction of such measures. But due to the differences that exist, both within the developed countries and between the least developed

and developing countries and developed countries, it is very difficult to expect such an agreement to be reached in the next few years. Of course, by adopting the CBAM the European Union is initiating a wider international dialogue and is encouraging other countries to consider introducing similar mechanisms. The CBAM is one of the EU's key instruments for achieving Europe's ultimate goal of carbon neutrality by 2050 and for influencing other countries to introduce similar policies and instruments.

The number of sectors covered by this mechanism is limited, but it should be expected that the European Union will gradually expand the list of goods and services for which the allowance will be required. In parallel, an increase in the price of one tone of carbon dioxide equivalent should be expected.

Exporting countries and companies to the European Single Market should closely monitor this process and take appropriate measures and policies. The transformation to a carbon neutral economy should also be used to increase the competitiveness of national economies. Proper implementation of such mechanisms is of particular importance for the preservation of planet earth for future generations.

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DEFINITION OF STATE BORDER, BORDER LINE, BORDER BELT, BORDER AREA AND BORDER CROSSING

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Abstract
The history of mankind is known for the emergence of borders between tribes, cultures, civilizations. In the philosophy of the border we know the limitation of all things in time-space, in one territory, with its own power, with its own laws and social order, created through the historical of that society. According to Plato, the state is a historical category created in time and space that has its own natural cycle of regimes. On the other hand. The border line of the state (ies) is determined in agreement with the neighboring states by agreement, which should be accepted by the international community. The border zone is determined at a certain depth from the border line, and is determined by special state, ie government legal acts and regulations. According to the territory, it covers Northern Macedonia in the heart of the Balkan Peninsula. The border area is part of the territory of Northern Macedonia on land, rivers and mountains. Corridor 10 is an international highway starting from the city of Gdansk, Katowice, Bratislava, Budapest, Belgrade, Skopje, Athens, Cairo. Corridor 10 in our country connects the cities of Kumanovo-Skopje-Veles-Gradsko-Demir Kapija-Gevgelija. If all types of roads in our country are analyzed, then they reach a length of 9,573 km of categorized road network with (status since 1995), of which 910 km are highways, 3,058 km, regional and 5,606 km, local roads. However, it should be noted that only 584 km, highways are included in the system of the European road network, roads "E", and of them in the TEM system (Trans-European Highway) roads can be included only 138 km, highways . , including: Kumanovo-Petrovec-Veles-Gradsko; Skopje-Petrovec; Hippodrome-Miladinovci; Tetovo-Gostivar (Spatial Plan of the Republic of Macedonia, 1999, 73).

Key words: History, position, border, corridors, traffic.

The notion of a state border as a historical category
It has been known since the history of mankind for the emergence of borders between tribes, cultures and civilizations. In the prehistoric period, the "Divine rule" prevailed - that the whole earth was created for man and he could freely use its benefits, because man himself is an integral part of it. With the emergence of property through the erection of the first fence, begins the restriction of things in space, ie, groups of people of the same origin, ethnicities, cultures and civilizations. What is a boundary as a term, as a practice that does not necessarily mean just a space surrounded by imaginary signs (concrete, stone, etc.) pillars or boundaries of human behavior among themselves or a full-fledged boundary of unlimited power of the individual or group of people with different socio-structure?

In philosophy, the word "border" means the restriction of all things in space and time, on one territory, with its own power, with its own laws and social order, created through the historical from that society. The universal history of mankind is not an encyclopedic catalog of all that is known about humanity, but an attempt to find a reasonable pattern in the overall development of human societies. That Universal History, if it exists, is not universal for all peoples and cultures confined between ethno-borders. According to Plato, the state is a historical category created in time, space, which has its own natural cycle of regimes. On the other hand, Aristotle in his book "Politics" writes that the state is created as a result of certain reasons, of revolutions, when one regime changes with another, and so on as long as that state exists. Aristotle held the view that no regime could fully meet the needs of society and man, and that this dissatisfaction compels people to replace one regime with another in an endless cycle.

The first true universal histories of states and societies in the Western tradition are the Christian principles of conduct as collectives and as individuals. Although there have been Greek and Roman attempts to write histories of the known world, states and civilizations, Christianity first introduced the concept of equality of all people in the eyes of God, and hence the idea of the common destiny of all nations in their lands. . Thus, for example, the Christian historian St. Augustine was not interested in the specific histories of the Greeks or the Jews as such, but what mattered to them was the salvation of man as a man, something that would be the fulfillment of God's will on earth. All nations are mere branches of a more general humanity whose destiny could be understood through God's plan for mankind. In that sense, Christianity certainly introduces the notion that history and states have an end in time, that it begins with God's creation of man and ends with his final salvation. For Christians, the end of earthly history comes with the day of the Last Judgment which will bring man into the kingdom of heaven, and from that moment the earth and earthly events, states, and civilizations will cease to exist. All nations are mere branches of a more general humanity whose destiny could be understood through God's plan for mankind.

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Boundary line
The border line of the state (s) is established with the neighboring countries by way of an agreement, which should be accepted by the international community. In this sense, it is a line defined at individual points, marked with special signs determined by international norms and criteria. The border line between the states usually extends along the highest mountain points which are watersheds between the watersheds, cultures, the history of those ethnocultures and so on. The border line, depending on the location, can be on mountainous areas, valleys, valleys, gorges, passages, rivers, lakes, etc.

Border belt
The border zone is determined at a certain depth from the border line, and is determined by special state, ie government legal acts and regulations. According to the territory it covers, the Republic of Northern Macedonia is located in the heart of the Balkan Peninsula. The border zone is a variable category that is primarily determined by the government (s) of the Republic of Northern Macedonia and neighboring countries. In certain areas of the Republic of Northern Macedonia, it can be drawn deeper than 100 meters, only in cases when the state has a special interest in facilitating the citizens for certain actions, when processing their plots in that area. For example, according to the Decision adopted by the Government of the Republic of Northern Macedonia to expand the border zone to certain parts of the state border (Official Gazette of RM, no. 39/92),

Border area

The border area is part of the territory of the Republic of Northern Macedonia on land, on rivers and lakes outside the border zone at a depth of up to 10 km. The depth of the border area is determined by each country separately, based on its interests, ie the interests of the citizens who are in the border area. The border area includes the border line and the border belt with all the elements that characterize them. The border area means parts not only on land, but also on water surfaces, rivers and lakes, also withdrawn at a depth of 10 km from the border zone.

Border crossings
The border crossing is a place, determined by special normative acts, in which the necessary infrastructure facilities and services for the customs activity of the Republic of Northern Macedonia are installed. They are placed in places, locations, which are connected with modern communications that have an interstate and international character, and they are also placed in localities where there is an assumption that they can contribute to regional communication with the neighboring country. Border crossings are set at the border zone, which is popularly known as a neutral border zone, always keeping in mind the problem of uninterrupted communication of people, goods and the like.

BORDER CROSSINGS ON THE MACEDONIAN-KOSOVO AND SERBIAN BORDER LINES
Natural-geographical features of the northern border
The Macedonian-Kosovo and Serbian border starts from the border between the Republic of Northern Macedonia, the Republic of Albania and the protectorate of Kosovo at the Sherupa elevation at an altitude of 2092 meters in the west, which mostly moves along the highest points of Shar Mountain which is also a watershed between the Adriatic Sea. Bel Drim in Kosovo), the Aegean Sea (the Vardar River basin) and the bifurcation of the Nerodimka River, which belongs to the Black Sea basin. The northern border in the part with Kosovo from the elevation of Sherupa to the elevation of 2498 meters on Ljuboten, which is located west of Zaky Zagones (2370m) is 73210 meters with an average altitude of 2465.5 meters. At this length of the border line, the lowest point is the elevation of 2092 meters at Sherupa in the west, and the highest point occurs at the locality Djurdjeviste with an elevation of 2658 meters. which belongs to the mountain Rudoka, which is a distinct natural high mountain border. From the mountain Ljuboten, ie from the locality киaki Zanoges (2008 m) the eastern slope of the mountain Ljuboten, the border line gradually descends to the riverbed Lepenec (320 m) and then from here again rises to Skopska Crna Gora, ie this section of the border line is also a typical mountain border line up to the border crossing Tabanovce (395m) north of the city of Kumanovo. The length of the border from the locality Zaki Zanoges (2370m) to the bed of the river Lepenec, is 28 530 meters, with an average altitude of 754.6 m. which is also the highest border point. It is interesting to mention that the most suitable places for border crossings on the northern border are the localities around the upper part of the Radika river,

Natural-geographical facilities for setting border crossings on the Macedonian-Serbian border
Natural-geographical factors and elements are of great importance for setting the border crossings and their necessary infrastructure. The theory of the location for setting border crossings is related to the relief characteristics of the space, then the hydrographic and other elements in the space. The natural-geographical location conditions of the Macedonian-Serbian and the part with the Kosovo border for setting border crossings is conditioned primarily by the relief characteristics of the terrain, as well as the gravitational characteristics of the urban centers between these two neighboring countries, locations through which there are traditional communication and other connections between settlements (rural and urban) on both sides.

BORDER CROSSINGS AT THE MACEDONIAN-SERBIAN BORDER
On the Macedonian-Kosovo and Serbian border there are the following border crossings: Jazince (Tetovo), Blace (Skopje) and Tabanovci (Kumanovo), while smaller border crossings are Sopot and Pelince near Kumanovo. In addition to these border crossings, there is interest on our part to open a border crossing at the village of Lojane, which would allow shorter communication between the villages located in the Lipkovo area on the one hand and the settlements in the Presevo Valley in Serbia on the other.

TABANOVCE BORDER CROSSING NEAR KUMANOVO
Geographical location and traffic connection
The border crossing Tabanovce is located in the Kumanovo area in the northern part of the territory of the Republic of Northern Macedonia on 42o 14 '54' 'north latitude and 21o 42' 59 '' east longitude. This border crossing is traditionally the most frequent between the Republic of Serbia (and the wider area of Central and Western Europe) and Northern Macedonia, because Corridor 10 (Friendship) passes through this crossing. Tabanovce as a border crossing to the city of Kumanovo is 8 km away, it is an area where international roads meet: Corridor 10 (Friendship) (north-south) and Corridor 8 (west-east). The mentioned area is characterized by a series of natural and anthropogenic tourist values that are diverse in their attractive content. The natural and anthropogenic motifs in this area arise from the specific natural and socio-historical conditions and trends through the last decades. Natural motifs are represented by numerous mountains, rivers, lakes, thermal and mineral waters, gorges, river valleys, etc. Anthropogenic tourist motifs are also present in the old and new city architecture, costumes, handicrafts and their production, monasteries, churches, mosques, turbines, various older and newer monuments, Lipkovo archeological site, the Archaeological Museum in the city of Kuma, etc. The Kumanovo area is composed of old huge mountains. Parts of Skopska Crna Gora, popularly known as Karadag, rise to the west. Opposite this mountain are the slopes of Ruen, while the slopes of the middle-high Kozjak descend into the Trade area. To the east is the German mountain and the Slavic valley, while to the south and southeast with hilly terrains and Gradiska mountain. The wavy Kumanovo field is separated from the Skopje valley and Ovche Pole (A. Selmani, 2005). The Kumanovo area almost coincides with the territories of today's municipalities Lipkovo, Kumanovo and Staro Nagoricane, so that together the three territories cover a total area of 1 212 km2 or 4.71% of the territory of the Republic of Northern Macedonia. Within this area, the city of Kumanovo and the surrounding area has a very favorable geographical position. The low Kumanovo-Presevo watershed (450m) allows easier entry into the valley of South Morava, and from the south, through Romanovski Prevoj, the area is connected to the composite valley of Vardar. Corridor 10 (Friendship) and Corridor 8 pass through the Kumanovo area, connecting the northern with the southern and eastern areas of the Adriatic Sea to the west, then those around the Aegean Sea to the south and the Black Sea to the east. In the past, the road Kumanovo-Kriva Palanka was of great importance, then the road Kumanovo-Ovche Pole, known as "Serski Pat" or "typical road", through which Kumanovo was connected with settlements and areas to the east. With the construction of the railway line along the Moravian-Vardar valley, the traffic connection in the north-south direction was strengthened, and the roads in the west-east direction were also strengthened. Let us mention that the routes of these roads in the past did not always follow today's road lines, so some of them passed north or east of Kumanovo. Today, as in the past, the Moravian-Vardar valley is of great importance, which has been turned into a significant traffic and development axis (Corridor 10-Friendship), as there is a tendency to turn the traffic direction west-east (Corridor 8). In addition to the above, there are several local roads that connect Kumanovo with the surrounding area.

Communicative-geographical situation of the Republic of Northern Macedonia
This proximity to the Gulf of Thessaloniki in the Aegean Sea is an important component of our country.

Through the famous valley of the river Vardar, which springs in the Republic of Northern Macedonia (Vrutok, near Gostivar), is a strong potential for communication links with the countries of Southeast Europe and beyond. The valley of the river Vardar is connected with the valley of South Morava through the Kumanovo-Presevo plain (450 m) which connects the northern and southern part of our Northern Macedonia. On the other hand, through the communication axis of Vardar is the highway of international character E-75 or (Friendship), international railway and air communication corridor in which the communication routes from west to east are connected, so that all are important in the development of functions. .their communicative(A. Selmani, 1992).Corridor 10 -Friendship, Corridor 8 and in perspective the Central Corridor East-Western Macedonia pass through the territory of the Republic of Northern Macedonia.

Map1. **View of**Corridor 10-Friendship and Corridor 8 - as important international roads.

Road traffic
Corridor 10-Friendship is basically the international highway that starts in the city of Gdansk, Katowice, Bratislava, Budapest, Belgrade, Skopje, Athens, Cairo, while in the part of Southeast Europe and in our country it is known as the E-75 highway. We have a meridional direction of expansion North-South that connects the border crossings Tabanovce (north of Kumanovo) and Bogorodica (Gevgelija) to the south. Corridor 10-Friendship with us connects the cities of Kumanovo-Skopje-Veles-Gradsko-Demir Kapija-Gevgelija. The relief configuration and the central position of the Republic of Northern Macedonia on the Balkan Peninsula undoubtedly enable intensive connections with the neighboring countries and regions. Indeed, the natural axis Vardar-Morava with the built infrastructure is now an important spatial-functional road axis of European importance,

The following international roads pass through the territory of the Republic of Northern Macedonia:

E-75-Friendship - Gdansk, Katowice, Bratislava, Budapest, Belgrade, Skopje, Athens, Cairo;

E-65 - Malmo, Prague, Brno, Bratislava, Zagreb, Rijeka, Dubrovnik, Podgorica, Pristina, Skopje, Tetovo, Ohrid, Bitola, Lamia, Kalamata, South Africa;

E-850 - Brindisi (Italy), Durres, Ohrid (connection with E65) and

E-871 - Sofia (connection with E79, E80 and E83), Kumanovo (connection with E75)

*The TEM highways that are expected to pass near Macedonia are:*

E-80 - Rome, Pescara, Dubrovnik, Podgorica, Pristina, Nis, Sofia;

E-771 - Bari, Bar, Shkodra, Prizren, Pristina;

E-90 - Palermo, Taranto, Igoumenitsa, Thessaloniki, Alexandroupolis and

E-79 - Sofia, Blagoevgrad, Thessaloniki.

Across the Vardar axis is the highway of international character E-75-Friendship, international railway and important air communication space in which the road routes from west and east are connected, so that they gain importance in the development of their communication functions.
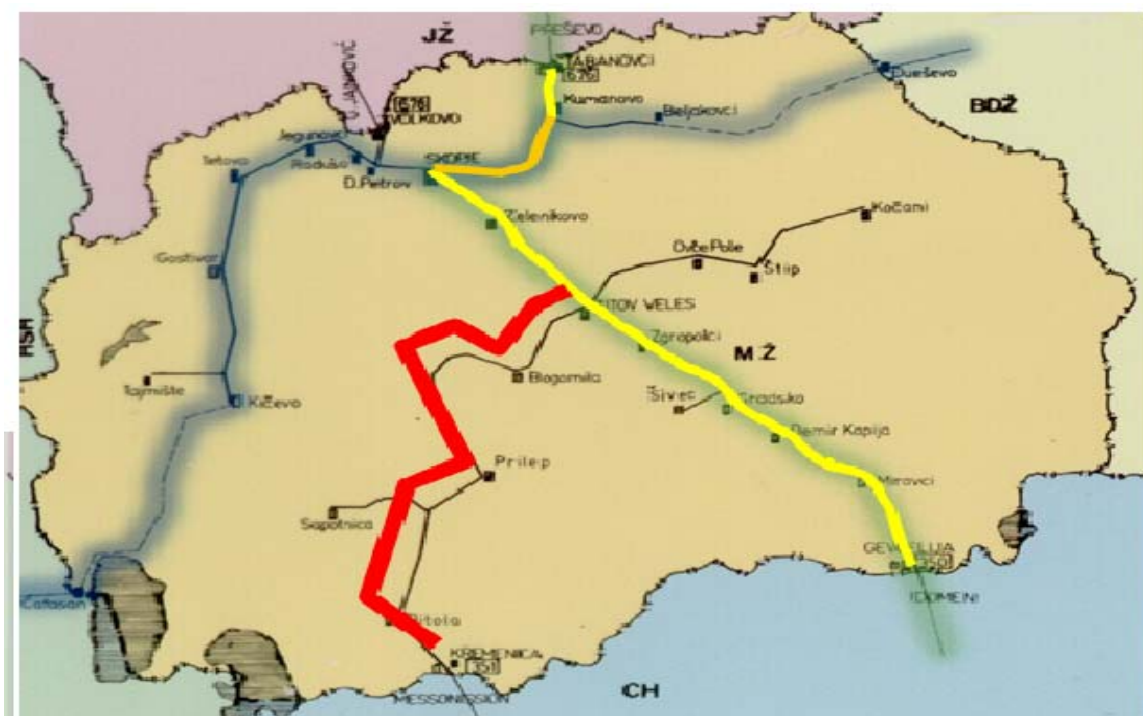
Map2. Corridor 10 D is an important regional road with branch Veles-Bitola-Kremenica

Despite the fact that the international road "E-75" -Friendship passes through the territory of our country, our country Northern Macedonia gains importance by intensifying through this area the Adriatic Highway which penetrates to us through the Kacanica Gorge. Efforts are being made to intensify the construction of Corridor 8 as soon as possible, in which case our country gets real opportunities for modern connections with neighboring countries Bulgaria and Albania and beyond. Indeed, Corridor 8, from Sofia through Kriva Palanka - Kumanovo - Skopje - Tetovo - Struga at the Kafasan crossing enters the territory of the Republic of Albania, so that the Republic of Northern Macedonia will approach the Adriatic coast (Durres), faithful to all Mediterranean countries and those in the world. On the territory of the Republic of Northern Macedonia, highways are an important resource for the economic development of the country. They are public roads that connect the economic regions of the country and that are connected to the roads of neighboring countries. The main pillar of the road network of the

Republic of Northern Macedonia are the main roads. It was mentioned above that the main task of the highways is to connect the state space inside and out. The connection inside is connected with the big commercial and urban centers, while the connection from the outside is connected with the connection of the state with the spaces outside the border of the territory of the state.
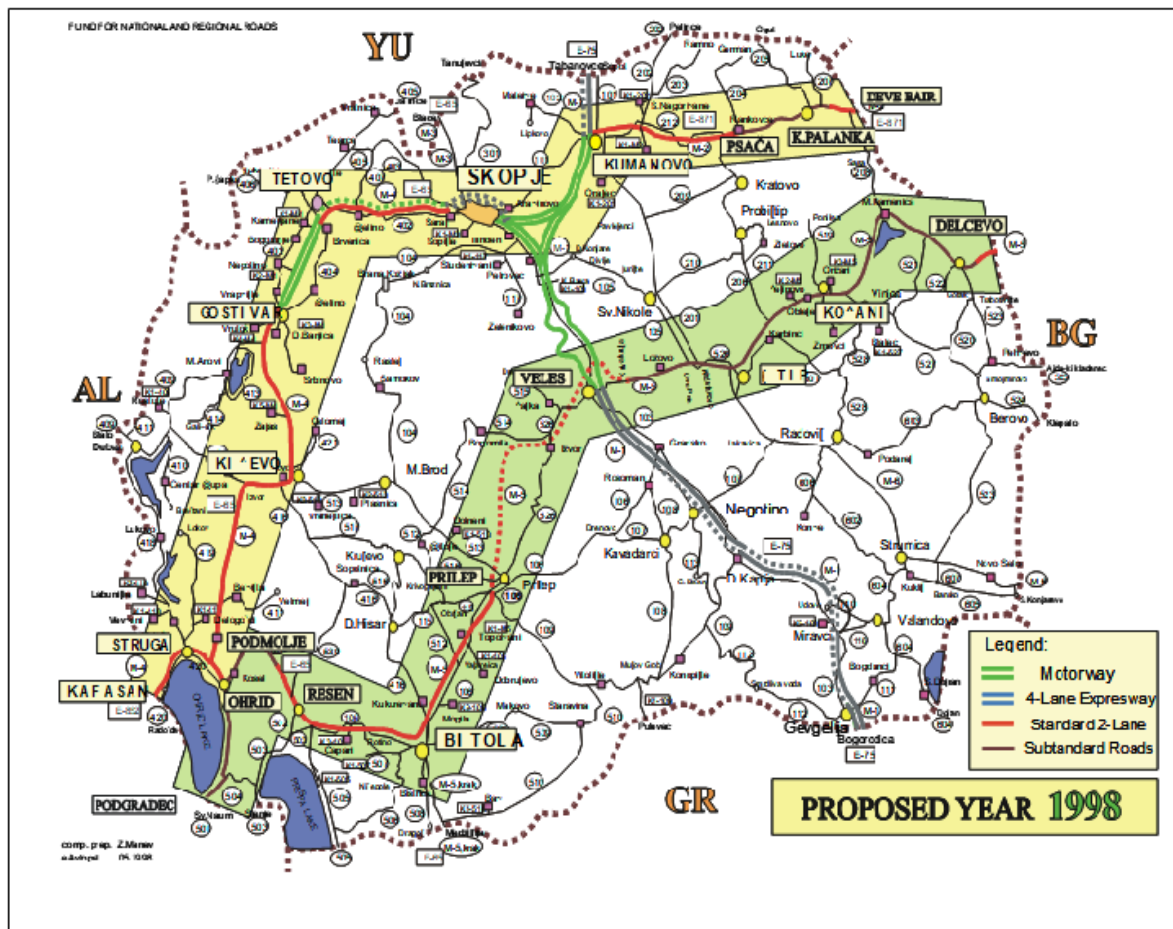
Map3. View of Corridor 8 and the central Corridor West-East
Source: Joing transpoirt Committee, European Community - R. Macedonia, Sixth Meeting,
Ministry of Transport and Communications, Brussels, 12 May 2004

The total length of the main roads is about 910 km, so the largest length is the M-5 highway with a total length of 332.3 km. This highway has 80 km, roads that are still of poor quality according to international criteria. The roads M-1 and M-4 are of the greatest importance for the Republic of Northern Macedonia, while according to the load the greatest importance is the highway M-4.
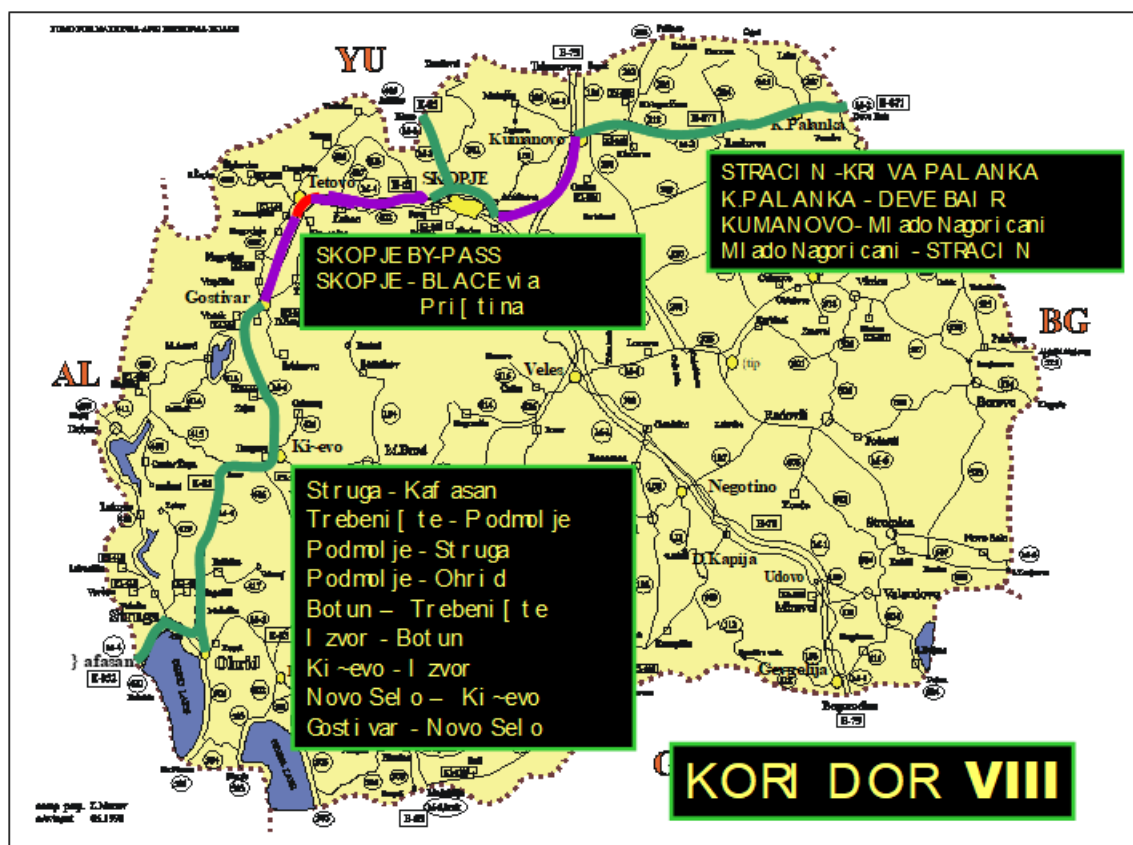
Map4. View ofCorridor 8 to be upgraded.

The total length of this road reaches 194.1 km, E-65 with a total length of 156.1 km, which together with E-852 are available from 176.3 km. These roads cover 21.3% of the total length of highways in the Republic of Northern Macedonia.

Table1. View of Highways in the Republic of Northern Macedonia

Road type	Direction of the road	Debt-ina	Asfaлт	An impassable road	Auto way	E-route
M-1	**Tabanoc-Kumanovo-Miladinovc-Veles-Gevgelija (E-75)**	174.2	174.2	0.0	87.4	174.2
M-2	**Kumanovo-Rankovc-Kriva Palanka-Deve Bair (E-871)**	73.8	73.8	0.0	0.0	73.8
M-3	**Petrovec-Hippodrome-Shkupe-Blace (E-65)**	40.3	40.3	0.0	14.2	19.0
M-4	**Miladinovc-Hippodrome-Skopje-Tetovo-Gostivar-Kicevo-Podmoce-Struga-Kafetana (E-65 = 156.1 km; E-852 = 20.2 km)**	194.1	194.1	0.0	29.9	176.3
M-5	**Podmoche-Ohrid-Resen-Bitola-Prilep-Veles (Babuna) -Otovica-Stip-Kochani-Delchevo-Zvegor with branch Bitola-Medzitlija (311.8 + 20.5 = 332.3 E-65)**	332.3	252.3	80.0	0.0	97.9
M-6	**Stip-Radovish-Strumica-Novo Selo**	94.4	94.4	0.0	0.0	0.0

Source: Fund for Highways and Regional Roads, 2004

Map5: View ofparts of Corridor 10-Friendship that need to be reconstructed according to European standards

If all types of roads in our country are analyzed, then they reach a length of 9,573 km, categorized road network (status since 1995), of which 910 km are highways, 3,058 km regional and 5,606 km local roads. However, it should be noted that only 584 km of highways are included in the system of the European road network, "E" roads, and of these in the TEM system (Trans-European Highway) roads can be included only 138 km of highways. , including: Kumanovo-Petrovec-Veles-Gradsko; Skopje-Petrovec; Hippodrome-Miladinovci; Tetovo-Gostivar (Spatial Plan of the Republic of Macedonia, 1999, 73).

If the categories of roads are different and their quality, then the conclusion is that from the total length of the categorized road network of 5,400 km (56.4%) are grouped roads with asphalt, concrete, stone blocks and the like. then 1,182 km (12.4%) are of macadam construction, while 2,991 km (31.2%) are of land or unpaved roads, which shows that the Republic of Northern Macedonia lags far behind the developed European countries.

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THE TREATMENT OF SOLVENCY II IN THE OPERATION OF INSURANCE COMPANIES

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Abstract
The adaptation of the first Non-Life Insurance Directive (Directive 73/239 / EEC) in 1973 and the Life Insurance Directive (Directive 79/267 / EEC) six years later were the first steps towards the harmonization of insurance supervision in Europe. The implementation of these directives results in the harmonization of solvency requirements in the EU member states. The Supervisory Mode of Solvency 1 was promoted by the Second and Third Directives (Directives 88/357 / EEC, 90/619 / EEC, 92/49 / EEC and 92/96 / EEC), which implement the freedom to provide insurance services in industry. The basis of solvency in the EU was established in 1970. The notion of solvency, including the insurance sector itself, financial markets, regulatory approach, risk management techniques and accounting standards, has changed radically. The solvency regulation for insurance companies operating in the territory of the EU is based on the calculation and maintenance of a minimum solvency margin, which should enable control and monitoring of the required capital and the assumed risks (Jankovik, 2007). The current numbers confirm that insurance is a serious, stable and loyal partner of the citizens, the economy and in general of the whole society of our country. Insurance is gaining momentum in all spheres of human activity, increasing the number of participants in the insurance sector or the number of insurance companies as main pillar. The aim is to take a decisive step to pave the way to an industry that conquers the industrial market by offering stable insurance products, designed according to customer requirements.

Key Words: *Solvency, capital, insurance.*

Basic charecteristics
The Solvency 1 framework has been in use since 1970, using a very simple model for calculating capital requirements. The main reasons for the changes in the Solvency 1 concept were that the capital claims were not related to the risk taken by the insurance companies, ie the capital claims were not compatibile with the risk profile of the insurers.

Looking at the events in the banking system, especially with the advent of the Basel 2 standards, the idea and the insurance sector to have its own system called Solvency 2 emerged on the same principle.
The Solvency 2 concept was designed to reflect the economic risks faced by insurance and reinsurance companies. It is intended to improve the financial stability of insurers and reinsurers, all in order to improve the protection of policyholders, including in difficult times. Regulatory insurer insolvency has changed substantially with the advent of the Solvency 2 model.

The purpose of the Solvency 2 model is to harmonize insurance regulations in EU countries, to improve protection of policyholders, and to increase the stability of the financial system as a whole. To achieve these goals, the Solvency 2 model applies a 3-pillar structure, capital requirements (pillar 1), qualitative claims (pillar 2) and public disclosure (pillar 3), (see EC, 2007b).

At the core of this model is the goal to protect the owners of insurance contracts. The protection of policyholders is considered mandatory due to the existence of asymmetric information between policyholders and insurance companies, which opens the possibility of moral hazard.

Another argument in this series is that the insolvency of insurance companies can impose disproportionately high costs on policyholders or society. This can happen in the event that an insured event occurs at the same time if the company becomes insolvent. In this case, the insured will not receive any compensation which could seriously jeopardize their economic survival. From the insurer's perspective, the risk of insolvency is directly related to the quality of the insurance product and is therefore part of the decision whether to contract with a particular insurance company or not.

Regulation of insurance under solvency 2 model

Insurer solvency is one of the most important factors for adequate assessment of insurance contracts

Regulation of the solvency of insurance companies

Perspectives and approaches	- Wide range of solvency frameworks currently implemented - Insurer protection as a common goal of these models - Insurer protection as a common goal of these models - Solvency models should minimize distortions in insurance markets
Придонес	- Overview of solvency systems in different countries - Expanding the conceptual criteria from (Cummins et al.1994) for estimating solvency models. -Evaluation of the selected solvency systems according to these criteria

Areas of research and contributions

Since 1990, most large economies have changed their regulatory models for the insurance industry from non-risk-based rules to those based on risk assessment.

Accelerated capital-based standards are becoming the norm in the use of regulatory frameworks. The United States and Canada were among the first to use a capital-based standard from 1992 and 1994. In 1996, Japan followed the trend by implementing the Margina Solvency standard. In 2001, Australia promoted its General Insurance Reform Act. The United Kingdom promoted the concept of "extended capital requirement" and "individual capital calculation" in 2004, while Switzerland promoted its Swiss Solvency Test in 2006.

EU countries have generally been slow to implement these standards. The legal Solvency 1 framework was implemented in 2002, but due to the fact that the desired standards were not met, the system was redirected to Solvency 2, which started to be implemented in 2004 and finally completed in 2009. Implementation of the Solvency 2 node is expected to start implementing after 2010, after the approval of the proposals for the new EU Directives and the provision of detailed instructions for its implementation (Pricewaterhouse Coopers, 2007).

The new concept also aims to promote more effective supervision which would change the behavior and philosophy of insurers. Solvency 2 system has a capital-based approach to risk-taking with the intention of aligning capital with risk.

The Solvency 2 concept is based on 3 thematic areas or pillars of regulation that are designed to complement each other. Pillar 1 consists of quantitative requirements (ie how much capital one insurer should hold). Pillar 2 sets requirements in the area of management and risk management. Pillar 3 addresses oversight reports and transparency of requirements.

> **The three basic pillars of Solvency 2**

Pillar 1- focuses on the quantitative aspects of solvency, ie how capital claims will be calculated. The quantitative requirements of Pillar 1 are set out in five sections.

The valuation of assets and liabilities, the valuation approach for all assets and liabilities listed in the framework is based on the concept of fair value set by (IASB-International Accounting Standards Board).

Technical reserves - represent the liabilities arising on the basis of insurance contracts contracted with the insured. Technical provisions represent the amount recognized in the balance sheet.

Solvency capital requirement - defines how the insurer will determine the amount of capital to be retained.

Minimum Capital Requirement (CAP) means the minimum amount of capital that an insurance company must have to carry on its business. The method of calculation (ISA) was a controversial topic of debate among shareholders in the process of developing the Solvency 2 framework. The framework won in April 2009 shows that ISAs should not fall below 25% or more than 45% of the SCR (Sandstorm 2006, p285).

Capital adequacy requirements - Capital adequacy should be sensitive to the size, complexity and risk assumed by insurance contracts as well as the accounting claims required by insurers.

A serious threat to insurance solvency can be,
A) Operational risks, or the risk of systemic collapse or negligence,
B) Credit risk, or the risk that third parties will not pay their debts,
C) Market risk, or the risk of falling value of investments made.
Pillar 2 focuses on quality measures (including the supervision process). Not all risks can be assessed through quantitative measures alone. The supervision process is required in addition to the quantitative elements of Pillar 1. In the event that the risk can be quantitatively evaluated, the adequacy of such evaluation should be reviewed by a qualified third party (supervisor). This is especially important when the insurer uses internal models to make such risk assessments.

Under Pillar 2, the supervisor will;
- Review and evaluation of the strategies, processes and reporting procedures established by the insurer to be in compliance with the framework directive.
- Assess the insurer's management capacity to identify, assess and manage the risks and potential risks they would face in the business.

The Supervisory Review (SRS) also assesses the adequacy of insurers' methods and practice to identify possible future events or future changes in economic conditions that may adversely affect the company financial position.

Pillar 2 is also intended to encourage insurers to improve their risk management systems and their effectiveness in identifying, monitoring and managing risk.

Supervisors should have the power to force insurers to reduce the weaknesses and shortcomings of their management system. The supervisor should be able to ask the insurer to change its reporting strategies, processes and reporting procedures to ensure that they are strong enough. Under Solvency 2 pillar 2, corporate governance consists of 4 basic functions:

- **Risk management** - consists of underwriting (risk taking) and booking, asset and liability management (ALM), investment, liquidity, risk mitigation, etc.
- **Actuary** - this function consists of methodologies and procedures for assessing the adequacy and uncertainty of technical provisions, among other problems.
- **Internal audit** - this function must be independent within the company
- **Internal control** - used to ensure the effectiveness and efficiency of company processes regarding the availability and confidentiality of information and compliance with relevant regulatory institutions.

Pillar 3 - the directive frame requires from the insurer to disclose annual basic information regarding the firm's solvency and financial condition, supervisory reports and financial statements. Prior to publication, the annual reports must be approved by the competent insurer administrators or management body.

If we take as a benchmark the share of liquidated damages in the gross written premium, we come to data that the same ratio in Macedonia is about 40% while the same is about 71% in the EU countries, in 2010. Percentage of investments in our country is generally concentrated in investing in deposits and loans with a share of 47% while the same investments in EU countries participate with only about 6%. However, insurance risk management in Macedonia is not sufficiently developed, as the focus is generally on the individual risks of the companies, and less on the market and macroeconomic risks. Due to this and the fact that the new European regulations or the new directives Solvency 2, which is already mandatory for every EU country, it is necessary for every insurance company in our country to be careful about the possible shocks that may occur.

Advantages and disadvantages of Solvency 2 model
The basis of solvency in the EU was established in 1970. The notion of solvency of the time, including the insurance sector itself, financial markets, regulatory approach, risk management techniques and accounting standards, has changed radically. The solvency regulation for insurance companies operating in the territory of the EU is based on the calculation and maintenance of a minimum solvency margin, which should enable control and monitoring of the required capital and the assumed risks.

The main disadvantage of the model is that when formulating it, the systematic risk is not taken into account, which also has a great impact on the entire insurance industry. The introduction of this factor (systematic risk) in the insurance regulation contributes to the solution of social costs from the collapse of financial institutions. All this in order to prevent future crises.
Also a disadvantage of this model is that it can not promote and contribute to a more effective and unitary system of the insurance industry, which would be achieved by strengthening the function of insurers as institutional investors and developing a regulatory framework that improves the adequate level. to protect the owners of insurance contracts and to support the stability of the wider financial system.

This process or legal package of reforms has its costs not only for the company (cost of implementing reforms, periodic costs for legal compliance including direct costs for financing

supervisory agencies, indirect administrative costs and costs of regulating capital) but for the whole insurance sector. (The evolution of insurance regulation in the EU since 2005.)

The solvency two model follows the initial establishment of the Solvency 1 model, which became effective in use in 2004. Through this model the approach to calculating capital was to use fixed rates and measure risk exposure. Solvency 1 was a transitional regulatory scheme that would be abandoned when the Solvency 2 model came to the fore, which was expected to apply from 2012.

Basel III Impact on Solvency 2 for the operations of insurance companies
Similar to insurance companies, the Basel 3 model is an international business standard that requires financial institutions (ie banks) to maintain sufficient liquid assets as reserves to cover the risky events that may arise in the course of their business. The Basel 3 provisions are a series of recommendations for banking laws and regulation issued by the Basel Committee on Banking Supervision. The name of these provisions is derived from Basel, Switzerland, where the committee that makes these provisions meets.

There is quite a bit of overlap between the Basal 2 Model and the Solvency 2 Model. The new capital and liquidity rules for banks (Basel2) and the new capital requirements for insurance companies (Solvency 2) are planned to be introduced from January 2013. Since the insured represent one of the larger institutional investors - in bank bonds, among other things - reciprocal effects will occur between these two sets of regulatory models in their implementation.

The solvency 2 model has changed the way insurance companies allocate their capital. Initially, the amount of capital that insurance companies are required to hold is determined by premiums. In the future, the risk that insurers are required to retain as part of their investment activities will be calculated at fair value and will determine the amount of capital that these institutions need to retain.

The solvency 2 model provides preferential treatment of bonds with good credit rating and short maturity. Government bonds issued by euro area member states do not require capital protection regardless of their credit rating. This creates incentives for insurers to allocate their capital.

Basel 3 askes the banks to establish more stable, long-term ways of investing. Newer liquidity requirements oblige banks to invest their funds in more stable, longer-term terms. As a result, they will issue more long-term bonds. At first glance, this seems to be quite the opposite of what the Solvency 2 system required because this model provides a preferential treatment for short-term investments. Although this scenario will cause some funds to be relocated, no dramatic changes are expected. If we take a closer look at the main types of insurance in banks bonds in different initiatives that will influence investment decisions, it will be clear that there will be changes in the allocation of funds. However, the investment base is not expected to disintegrate as the covered bonds are expected to increase significantly.

Insurers have always been considered stable, long-term and investors, thus making a major contribution to the financing of national economies. They also perform an indirect financing function, ie they play a very important role in financing banks, as they are one of the largest buyers of bank bonds, holding about 12% of all liabilities of the banking sector. So insurers invest in banks, which in turn finance the business through various loans. This is especially important for small and medium-sized companies, most of which are unable to obtain capital market funds.

A more critical factor will be the impact of the Solvency 2 model combined with the Bezel 3 liquidity changes, which require banks to establish a more stable financing structure. Because insurance companies play an important role in financing banks, the new rules established by the application of new regulatory models will have a negative impact in the future on insurance companies as lenders to banks.

New regulatory rules for banks stipulate that banks must be able to guarantee their long-term financing sources with a more independent and stable base. In this context, stable includes intermediate, share capital, long-term (senior) bonds (longer than one year) and covered bonds.

Another component of the model is in terms of liquidity receivables where banks are required to practice covered or guarantee financing especially in conditions of limited liquidity in the market. The aim is to promote risk-free financing.

INSURANCE SECTOR IN THE REPUBLIC OF NORTH MACEDONIA AND POSSIBILITIES OF IMPLEMENTATION OF SOLVENCY 2 MODEL

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Abstract
The economic importance of insurance is to enable families and companies to manage risk. Diversification and risk transfer are the most important factors in creating added value in insurance. The insurance sector in Macedonia is characterized by a small share in the financial system of about 3.3%, dynamic development and challenges for harmonization of domestic regulation and supervision of insurance with the regulation and practice of the European Union.

It is characterized by dynamic development and challenges for harmonization of the regulation and supervision of the insurance with the practice and regulation with the regulation that is practiced in the countries of the European Union. Insurance is gaining momentum in all spheres of human activity, increasing the number of participants in the insurance sector, ie the number of insurance companies as its main pillar. In the last decade, the insurance industry has faced various important changes, such as increasing liberalization, deregulation, financial and economic crisis, etc. The purpose of this paper will be to collect information and analyze the current situation of the business climate of the insurance industry in general in the EU members and with special reference in Macedonia, in order to encourage insurance companies to think and start preparations for partial implementation of the Solvency 2 project, which requires more time in preparation and increase of financial and human capacities. The low level of insurance penetration in the Republic of Macedonia, leads to significant space and opportunities for future growth

Key words; Insurance, capital adequacy, solvency, risks.

Indicators for the operation of the insurance companies in the Republic of North Macedonia

The insurance sector in Northern Macedonia is the third largest sector in the financial system after the banking one, which is by far the largest in the market with 82.5% of the total share in the financial sector, followed by pension insurance with about 10.5% (NBRM Annual Report, 2018). The insurance sector in Macedonia consists of 11 non-life insurance companies and five life insurance companies. The share of non-life insurance in the total gross policy premiums is dominant and is around 90% in 2013.

In 2019, the gross written premium (hereinafter, GRP) was realized in the total amount of Denar 10.58 billion, which is an increase of 6.61% compared to the GRP realized in 2018 (2018, -9.93 billion denars). In the non-life insurance sector, the GVA was realized in the amount of Denar 8.75 billion (2018, 8.26% billion denars), ie an increase of 5.99% compared to 2018. At the same time, life insurance realized GDP in the amount of Denar 1.83 billion (2018, Denar 1.67 billion), which is an increase of 9.69%.

On December 31, 2019, the insurance companies have assets in the amount of Denar 23.92 billion, which is an increase of 10.53% compared to last year (2018, Denar 21.64 billion). The total estimated capital of the insurance companies increased by 5.22% compared to 2018, ie at the end of 2019 it amounted to Denar 6.65 billion. The solvency margin, as the main indicator for assessing the stability of the insurance sector, is Denar 1.69 billion, with which

the capital of the insurance sector is 3.9 times above the level of the solvency margin. During 2019, the insurance sector realized a loss of 25.36 million denars. Thereby, the non-life insurance companies realized a loss of Denar 125.91 million, while the life insurance companies realized a profit after tax of Denar 100.55 million.

The structure of the insurance is as follows, in the total GVA the most significant share has the insurance of mortal vehicles with 51.17% (2018, - 51.4%), which consists of the dominant compulsory motor third party liability insurance (AO), which participates with 43.25% (2018, - 43.45%), and from the voluntary insurance of motor vehicles (casco) which I participated with 7.92% (2019, - 8.03%). Significant place in the structure of GRP has property insurance with 16.75% (2018, - 17.31%), life insurance with a share of 17.3% (2018, - 16.82%) and insurance against the consequences of an accident case (accident) with a participation of 6.56 (2018, - 6.85%). The structure by major insurance classes.

The number of gross claims paid during 2019 is 4.03 billion denars. Compared to 2018, this number of gross claims paid increased by 2.87% (2018 - 3.92 billion denars). The share of reinsurance in the gross claims paid is 13.34%. In the structure of gross claims paid, the largest share has the claims for auto liability with 51.11%, followed by the paid claims for motor insurance casco insurance with 13.46%, property insurance claims with a share of 11.99%, damages for Accident insurance with 10.44% and 12.99% claims were paid in the other classes of insurance. In the area of property insurance, a significant place is occupied by agricultural insurance with a share of 41.89% and total paid damages of 202.49 million denars.

The value of the assets of the insurance companies on 31.12.2019 is 23.92 billion denars and is higher by 10.53% compared to the total assets of the insurance companies in 2018. The investments have the largest share of 76.02% in the structure of the assets of the insurance companies (2018, - 75.75% and they have increased by 10.93% in relation to the invested assets in 2018. In terms of investments, the most significant share of 91.53% occupies the category of other financial investments and it has an increase of 13.23% compared to the previous year.

This category includes available-for-sale financial investments (47.15%), bank deposits, loans and other placements (35.99%), held-to-maturity financial investments (13.01%) and trading financial investments. (3.85%). The next more significant category are investments in land, buildings and other tangible assets (7.07%) which decreased by 10.64% compared to 2018. Next in importance, with a share of 11.42% in the structure of assets, are requirements that include requirements from direct insurance operations (requirements from insured persons, receivables from intermediaries and other requirements from direct insurance operations).

Structure of sources of funds
The sources of assets of the insurance companies in 2019 increased by 10.53% compared to 2018%, ie 23,917,949,505 denars in 2019, while in 2018 it amounted to 21,638,765,308 denars. The largest share of 59.74% in the structure of the sources of assets of the insurance companies have the gross technical reserves (2018, - 58.95%) and they had an increase of 12.03% compared to the previous year. The next category, with a share of 29.77% in the structure of the sources of funds, are the capital and reserves which increased by 4.99%. Liabilities of insurance companies, which in the structure of sources participate with 7.30% (2018, - 7.43%) increased by 13.04% in the previous year. Other liabilities (50.23%), liabilities from reinsurance and co-insurance (43.72%) and liabilities from direct insurance (6.06%) have the largest share in the structure of liabilities.

Technical reserves
The total amount of technical reserves of insurance companies performing non-life insurance operations at the end of 2019 is 8.24 billion denars, or 8.20% increase compared to the

previous year, while the total amount of technical reserves of companies for Insurance companies performing insurance activities in the life insurance group amounted to Denar 6.28 billion, which is an increase of 19.77% compared to the previous year.

In the structure of the technical reserves, the reserves for losses have the largest share, the reserves for portable premiums, and in the insurance companies that perform insurance activities in the life group, after these categories, the technical reserve occupies the most important place.

The assets that cover the technical reserves are those assets of the insurance company that serve to cover the future liabilities arising from the insurance contracts, as well as to cover the possible losses in relation to those risks related to performing insurance activities, for which the company for insurance is obliged to allocate funds to cover net technical reserves. The insurance company is obliged to invest funds in an amount at least equal to the value of the technical reserves in accordance with the Law on Insurance Supervision.
The investments of these funds at the end of 2019 amount to Denar 8.29 billion and cover 117.29% (2018 - 110.76%) of the total net technical reserves. The assets that cover the technical reserves of the non-life insurance companies are placed in securities issued by the Republic of Northern Macedonia (47.94%), bank deposits (40.32%), shares in investment funds (9.17%) and in shares (2.57%).

Risk management in the insurance industry in the Republic of North Macedonia
The purpose is to examine the risks to the stability of the Macedonian insurance sector. The theoretical literature indicates two groups of risks to the stability of the insurance sector, risks taken by individual companies and market and economic risks.

The insurance sector in Macedonia is a small market with a share in the financial system of 3.3%, dynamic development and challenges for harmonization of domestic regulations and insurance supervision with the regulation and practice of the European Union (EU).

The share of liquidated claims in gross written premiums was moderate 40% versus 71% in the EU in 2010, but the investment portfolio is highly concentrated in deposits and placements with a share of 47% in total investments versus only 6% in the EU. However, insurance risk management in Macedonia is not sufficiently developed, given that the focus is mainly on the individual risks undertaken by companies, and less on market and macroeconomic risks.

The insurance sector in Macedonia is the third largest sector of the financial system. Its share in the total assets of the financial system in 2013 was 3.3% (NBRM Annual Report on Financial Stability, 2013). The insurance sector in Macedonia consists of 11 insurance companies for non-life insurance and five for life insurance. The share of non-life insurance in the total gross written premiums is dominant and is around 90% in 2013. Due to such a high share, only non-life insurance companies will be further analyzed. The analyzed period will be from 2008 to 2012. The Macedonian insurance sector is characterized by significant differences in the quality of the insurance portfolio, as well as variations in the risks taken by individual insurance companies (Figure 1). Liquidated claims in relation to the gross written premium, as an indicator of the risk of individual companies, in the observed period have a median value of 40.7% and a moderate coefficient of variation of about 34%.

The second characteristic of the Macedonian insurance sector is the moderate market concentration, which affects the systemic risk of the entire market (Figure 2). Insolvency or the collapse of a dominant insurance company with a high market share can cause instability in the sector. The figure shows the market share of insurance companies divided into large, medium and small, calculated through the share of individual insurance companies in the total

gross written premium. High market concentration increases systemic risk. Macedonia's insurance system is characterized by moderate market concentration, with the top four insurance companies accounting for about 55% of gross written premiums, but no company exceeds a share of more than 20% in 2012 or 23% in 2008. In the analyzed period, there is a trend of decreasing the market share of the group of large companies and increasing the market share of the groups of small and medium companies, which is aimed at relativizing the importance of systemic insurance risk.

In addition to the risk of the individual loss portfolio, as well as the market and production concentration of the insurance sector, it is characterized by the dominance of deposits and loans in the investment portfolio. Figure 4 presents the structure of investments in the insurance sector. The share of investments in the total assets of the insurance sector in 2012 is 72%, of which the group of other investments is dominant, where, on the other hand, investments in deposits, loans and other placements account for a high 48%.

Hence, the biggest exposure of the insurance sector is to changes in the price or returns on deposits, loans and other placements and, consequently, to the stability of the banking system. In Macedonia, deposits are usually with variable interest rate, so there is a risk of lower interest rates, which would be reflected in reduced returns on investments. Lower interest rates in the banking sector are associated with a potentially higher need for solvency relative to total insurance capital. Hence, the presence of such market risk can be potentially significant for the Macedonian insurance sector. Macroeconomic risks can also be covered by the usual economic measure - gross domestic product, which covers the risk of a decline in economic activity that would potentially worsen the solvency margin.

Capital adequacy and solvency margin in insurance companies

In accordance with Articles 75 and 76 of the Law on Insurance Supervision, insurance companies must maintain the value of capital at least in the amount of the required level of solvency margin. According to the data submitted to the ISA, at the end of 2019, the total calculated capital of insurance companies5 is 6.65 billion denars, which is an increase of 5.22% compared to 2018.

Analyzed by insurance groups, the capital of non-life insurance companies is 5.18 billion denars, and of life insurance companies 1.46 billion denars. The solvency margin, as the main indicator for assessing the stability of the insurance sector, is Denar 1.69 billion (Denar 1.30 billion in non-life insurance and Denar 391 million in life insurance), thus the capital of the insurance sector is 3, 9 times above the solvency margin level.

In general, capital adequacy should be calculated based on the actual risk profile of the company, taking into account the impact of possible risk mitigation techniques, as well as the effects of diversification.

We will present the stability of the insurance sector through the participation of the solvency margin in the total insurance capital. The solvency margin is an accounting category that shows the minimum amount of capital that insurance companies should have at their disposal, depending on the size of the gross written premium and the claims. The higher the gross written premiums and liquidated claims, the higher the solvency margin required.
Thus, the company is considered riskier if it has high risks taken (gross written premiums) and high claims payments, so a higher solvency margin will be required. On the other hand, the total capital is a source of funds that should cover the incurred damages. Therefore, the lower the share of the solvency margin in the total capital, the more stable the insurance company (system) is considered, the greater the availability of sources of funds to cover claims, and vice versa. The risk threshold is considered to be the share of the solvency margin in the total

capital per unit, ie the value of this indicator above one indicates that the company does not have enough capital to cover the risks and creates a risk of individual collapse and risk of infection of the entire insurance sector. analysis Blagica Petreski).

In this context, Figure 6 shows that in the period 2008-2010, on average, the capital of the insurance sector in Macedonia recorded an upward trend, and the solvency margin slightly decreased, which affects the reduction of the share of the solvency margin in the total capital. . While in 2011 and 2012, on average, the capital registered a slight downward trend with a simultaneous slight increase in the solvency margin, which caused an increase in the share of the solvency margin in the total capital, however, these are slight shifts, mainly due to the overdue effect of the economic crisis. Throughout the analyzed period, on average, the share of the solvency margin in the total capital is relatively low, and the insurance system is in potentially good condition. According to these stylized facts about the Macedonian insurance system, in section 4 we will test its resistance to shocks, so we leave the identification of potential causal links for section 4. (empiriska analiza Blagica Petreski).

Implementation of the Solvency 2 project in the Republic of Northern Macedonia
Priorities for the Insurance Agency or the regulator of the insurance industry that is responsible for the implementation of the Solvency 2 project in 2021 will be several processes to which we will pay equal attention and energy. First, the Agency will actively cooperate with the Ministry of Finance in the preparation of the new Insurance Law in order to comply with the EU regulation - Solvency 2, as well as compliance with the Insurance Distribution Directive.

In the next period, the Insurance Supervision Agency will work on building a new risk-based supervision approach, which will identify and encourage sound operations both in terms of maintaining the solvency and financial stability of insurance companies and in terms of their market behavior. transparency and fair attitude towards the insured.

Within its competencies, the Agency will ensure full transparency of positive corporate practices and public recognition when the satisfaction of policyholders with the use of insurance services is indisputable, and this is achieved without compromising the financial situation and solvency, said the President of the Council of Experts. insurance supervision.

The general conclusion is that this process should be started by the insurance industry immediately in cooperation with the insurance market regulator (ISA), which should use the experience of the countries in the region, which already analyze the first experiences and problems from the application of Solvency II. This is because Solvency II is not a time-lapse law, but a process that needs to start and require a longer period of adjustment for companies. Macedonian insurance companies, given that 90% have a dominant share capital of EU member states, in which the process of compliance with Solvency II has long been completed, are in a more favorable position, because so far domestic companies are harmonizing their operations at the level of the grouping, so that the harmonization with the directives of Solvency II, will be much simpler in the insurance market of the Republic of Macedonia.

Opportunities for application of the Solvency 2 model
With the adoption of the Law on Insurance Supervision in April 2002, the process of harmonization of the Macedonian legislation with Solvency 1 formally started. 2 projects, thus starting a new era in insurance supervision.

In the next period, the Insurance Supervision Agency will work on building a new risk-based supervision approach, which will identify and encourage sound operations both in terms of maintaining the solvency and financial stability of insurance companies and in terms of their market behavior. transparency and fair attitude towards the insured.

Within its competencies, the Agency will ensure full transparency of positive corporate practices and public recognition when the satisfaction of policyholders with the use of insurance services is indisputable, and this is achieved without compromising the financial condition and solvency. It will stimulate competition between market participants to better meet the interests of policyholders, and add value to the corporate image, through public recognition of their business policies. However, the Agency will do the same if it identifies the development of negative corporate phenomena that disrupt the financial stability of the sector, provide incorrect and incomplete information about insurance services and affect the deterioration of the reputation of insurance services. The Agency will use all legal powers, and will propose amendments to existing laws, in order to fundamentally adjust the course of supervision of European regulations.

COMPANY INNOVATIVE STRATEGIC PLANNING AND ALLOCATIVE OPTIMIZATION OF THE FINANCIAL RESOURCES

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Abstract
A rational approach to strategic management usually starts with the analysis of external and internal environment in which the company operates. Often these analyzes are proven as difficult for companies because of the current economic uncertainty that exists at national, regional or global level. Companies are faced with many new and continuing challenges that change the perception of the business in general. Planning and analysis of the environment of the company should contain a review of the use of the resources, an examination of the material, human and financial resources which build the system of value of the company in terms of efficiency and effectiveness of all aspects of operations. Each element of the system of value is capable to add or subtract a certain value. The purpose of this analysis is to identify the strengths and weaknesses that will answer what the company can, and what can not in the context of business operations and the definition of strategic options. In this paper has been made a systematization of the financial objectives of the companies with an analysis of the most important financial indicators, first, the achieving financial stability, then the financial sustainability. Financial planning as an integral part of the planning process in general, is incorporated in terms of achieving short-term goals in the action strategy of the company and in terms of achieving long-term objectives which mean sustainable company competitiveness.

Key words: *financial goals, financial resources, financial strategy, financial stability and financial sustainability*
JEL Classification: M10; C11; A32

Introduction
The finances represent the bloodstream of the company. Without them it is impossible to pursuit any business activity. In fact, they represent monetary expression of all operations, transactions, receivables, liabilities and capital and in general, and all the goals in the company are translated into certain financial expression. Planning, directing and managing the finances of the companies is the task of the financial function. For the successful organization and execution of the financial function it is important to specify the basic postulates of the financial management.Financial management in the companies is expressed as leverage of the operation and development of the company through the available volume of funds. Accordingly, we can say that the financial management includes the following:

- Planning of the necessary funds;
- Organizing the collection of the required funds;
- Decisions regarding the distribution of the funds; and
- Control of the manner of use of these funds. (Brigham & Ehrhardt, 2008)

The numerous literature of the area of financial management provides more precise definition of the main sub-processes of financial management. In this connection, the financial management has three basic functions:

1) Financial forecasting and planning;
2) The collection of the necessary funds; and

3) Preparation and adoption of the financial decisions. (Brigham, 2012)

The effective management of finances requires the existence of particular purpose or goal, because the evaluation of the effectiveness of the decisions on financing should be implemented against certain standards. (Van Horne, 2002) It also means that in terms of financial management it is exceptionally important the differentiation between the concepts of efficiency and effectiveness. In fact, the term efficiency means success achieved and expresses the relationship between effects and resources. In other words, efficiency is to make "things on proper way," while effectiveness means to make "right things". Thereby, the effectiveness is the basis for success, while efficiency is the minimum requirement for survival once the success is achieved. Based on the consideration of the significant differences in terms efficiency and effectiveness, we can say that the objectives of financial management are twofold, i.e. achieving the efficiency and effectiveness, and all observed dynamically. (Ivaniš & Nešič, 2011).

Material method for financial goals and financial processes
Pursuant to the above mentioned, undoubtedly arises that financial management is part of the overall management of the company and that it comes down to directing, regulating and changing the financial flows towards maximum achievement of the overall goals of the company, as well as reaching the optimal business results. In other words, financial management should ensure the realization of the financial objectives of the company.Sublimated, the various definitions and approaches of the financial goals of the company can be systematized in a way that expresses the essence of overmanned oriented finances of the company. (Ross, Westerfield & Jaffe, 2008). Accordingly, in Figure 1, in a simplified manner is shown grouping of the basic financial objectives.

Figure 1. Basic financial goals of the company

Source: Ross, S. A.; Westerfield, R. A.; Jaffe, J. (2008) Corporate Finance 8th (Eighth) Edition, McGraw-Hill/Irwin, New York, pp.11-12

Rational acceptance of financial goals can lead to strengthening the financial power of the company as a broad goal. Namely, the creation and strengthening of the financial power of

the company represents a process that can be divided into string of partial goals that can be classified as follows:

1) Initial objectives - optimizing the structure

- Optimization of constitutional structure;
- Optimization of the structure of liquidity; and
- Optimization of the financial structure.

2) Action objectives - permanent financial operations

- Rational funding;
- Optimal liquidity; and
- Reducing the risk.

**3) Objectives of the performance - financial result**

- Return on investment (ROI); and
- Success of the financing.

4) Final objectives - financial power

- Enduring ability to pay;
- Permanent ability to finance; and
- Preserving and enhancing the property.

To fully define the management of finances in the company it is necessary to consider not only the financial goals of the company, but also the basic financial processes on which are based financial management activities. (Fabozzi & Peterson, 2003) The basic financial processes can be seen in Figure 2.

Figure 2. Content of the basic financial processes in the company
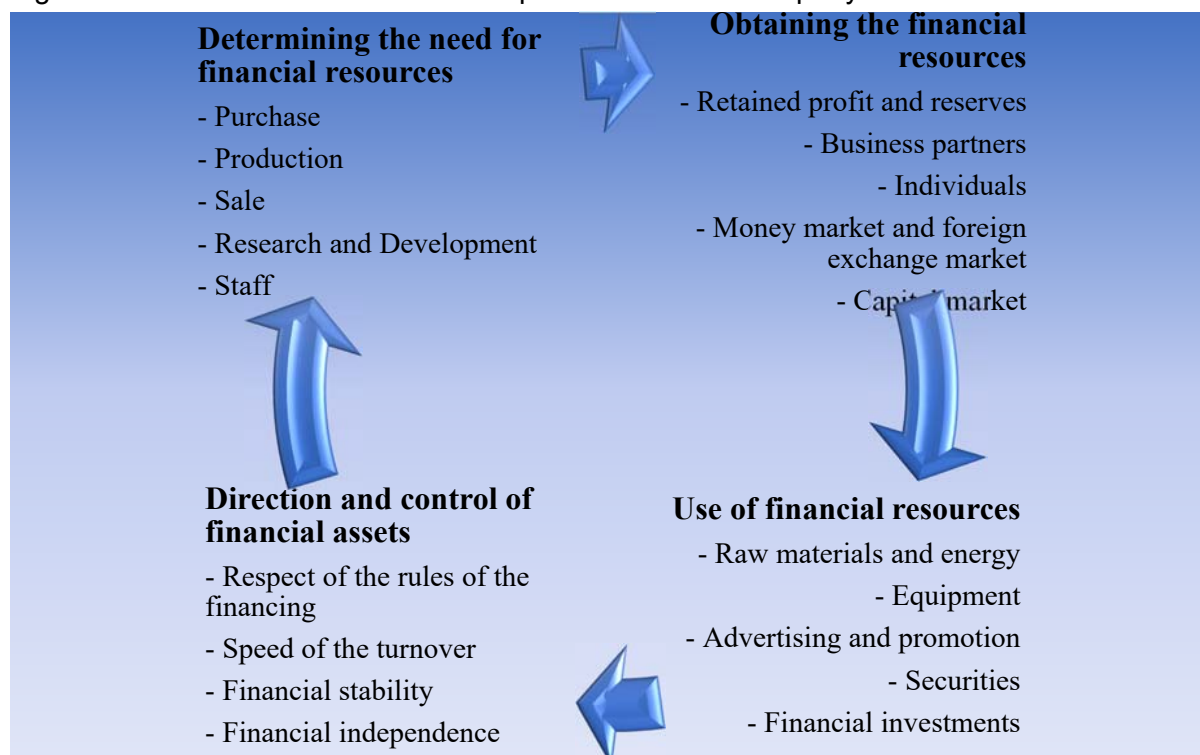
Source: Fabozzi, F. J.; Peterson, P. P. (2003) Financial Management & Analysis (Second edition,. John Wiley & Sons, Inc., New Jersey, pp.24

The systematization of specified financial goals of the company clearly shows that in the end all financial targets are related in a fairly wide final goal, which is the financial strength of the company. Moreover, through the optimization of financial structure established are the basic

financial assumptions and conditions. Through the realization of the action objectives is enabled the realization of the part of overall objectives relating to the permanent ability to pay and funding. Finally, through the achievement of the output objectives enabled is the realization of the ultimate goal - the preservation and increase of the company's assets (Brigham & Ehrhardt, 2008). Certainly, this process should be viewed dynamically, i.e. in terms of development, given that the criteria are changing over time and new appear to be implemented across the already defined financial objectives.

Optimal structure of the financial resources

The structure of financial investments or the forms of assets and sources of funds are a form of financial characteristics of the company. The structure changes accordingly with the investment decisions and decisions on funding. Generally, it can be differed three forms of structure, such as: constitutional structure, liquidity structure and financial structure.

1) Optimization of constitutional structure. The constitutional structure of assets is basically an aggregate or collection of individual structures and forms of investments in business assets. Consistent with this fact the optimization of constitutional structure is achieved primarily through investment decisions that would suit the established objectives.

2) Optimization of the structure of liquidity. The structure of the liquidity refers to the structure of the separate forms of investment in business assets in the form of money and working capital with varying degrees of liquidity in terms of their ability in the shortest time and without loss to be able to convert to cash shape. Thereby must be considered the criteria of dynamism which means: first, to take into account all cycles of separate types of assets, i.e. their transformation, and second, to calculate the structure of the dynamics of the liquidity of assets when making the investment decisions.

3) Optimization of the financial structure. The financial structure refers of sources of assets and their layout by maturity. Each period must match the adequately provided funds. The most stabile source of funds is equity. Others funds vary depending on the source of financing. Accordingly, the financial structure changes through the provision of funds from other sources and changes in equity. The latest definitions for optimal financial structure include also the terms of profitability. Therefore, the optimal financial structure is achieved when the cost of financing the lowest, where the sources of financing are favorable and when there is high security in terms of the risk.

Permanent and stabile financial performance

The second set of objectives in the focus puts: the rational financing, optimal liquidity and reducing the risk.

1) Rational funding. The essence of rational funding comes down to the implementation of providing the financial resources, so as to find the best combination of sources of financing. In this connection, under the optimal combination of funding sources means such a combination of internal and external sources of funding that provides optimal results, especially in terms of liquidity, cost-effectiveness and profitability of the funding and the work of the company. In terms of liquidity the optimal financing of the company is achieved when every day the company is able to pay all its matured payment obligations without restrictions in terms of the level of money and the deadlines. In terms of savings, the optimal financing is achieved if the company achieves the lowest cost of the collection of funds. In terms of cost-effectiveness the optimal finance company achieves if all collected funds are invested with maximum rate of profitability as a basic condition for the optimal development of the company.

2) The optimal liquidity. Essence of the liquidity as financial goal is solvency i.e. the relation between the liquidity assets and matured liabilities which coefficient should always be above 1.

3) Reducing the risk. The financial goals of the company in terms of risk fall into the so called area of protection of the company. Namely, reducing the risk is intended for safety in operation. The funds for reducing risk are the asset reserves. These funds should provide the intervention for unsuccessful action and to cover the risks of occurred losses.

Results and discussion - achieving the positive financial result
The output objectives represent a consequence of the active operations of the company. These objectives make up the third group of financial objectives and are often associated with the term "result". The result can be expressed in many ways, but most commonly expressed is as profit or gain. From the financial aspect the very interesting part of the profit is the one that retains in the company. This profit (retained earnings) stands out in special funds and is called accumulation. It increases the net assets of the company so that it can be treated as the final goal of the company. In terms of financial goals, is yet another important category of the result indicated by the term - cash flow. This term is treated as profit after tax increased by the amount of depreciation, which basically is used for investment to maintain and increase property. When setting of the output objectives particularly important comes the issue for the desired level of the financial result. In connection with this concept, certainly, basic is the maximization of the profit.

Results and discussion financial strength of the company
All so far partial financial goals of the company eventually link into a wider and final goal, which is the financial strength of the company. The financial strength of the company can be considered quantitatively and qualitatively. In quantitative terms under financial strength means the volume of assets, while in qualitative terms financial strength of the company includes: enduring ability to pay, permanent ability to finance, preservation of the capital and increase of the capital.

1) Permanent ability to pay. This objective implies that the company at all times should be able to pay all matured obligations. This necessarily presumes the funds to be always equal or greater than the matured liabilities.

2) Enduring power of financing. It means the company can finance long-term investments from own or borrowed sources and to finance short-term investments, without compromising the liquidity, profitability and autonomy of the company.

3) Preservation of the capital and increase of the capital. It means the company to work without financial loss and implies achieving accumulation which in turn enables the ability to finance from its own sources. (Brigham & Ehrhardt, 2008)

The financial planning in the process of action strategic planning
Successful planning plays two key roles in the company. First is used as a systematic approach to the managing business activities. Second, successful plans are used in the allocation of resources to the points of their most efficient use. Planning is a crucial activity for the sustainability of the company.

Financial planning means anticipating, direction, alignment and in advance calculated deployment of elements of the financial function in the company. Therefore, financial planning as a term differs from accounting concepts planning, budgeting and business plan of the company. Namely, financial planning is specifically planning process that relates primarily to planning of the financial flows and financial structure. It also means that financial planning is not planning of any value, but only planning of the defined financial goals of the company, and it becomes part of the whole i.e. part of integrated business planning in the company.

Therefore, it is not too excessive to say that the financial plan of the company is a kind of financial compass without which bearers of the financial function and financial management would not be able effectively and efficiently perform their tasks. (Brigham, 2012).

Respecting the various definitions of the financial planning, three very important conclusions are becoming:
- Financial plan is de facto a plan of the total activity of the company in a certain period that is translated into money terms;
- Through the financial plan can be anticipated certain funds and resources; and
- The need arises for projecting cash flows.

Besides noted, financial planning has other important purposes and tasks in the company among which stand out the maintenance of permanent financial stability and long-term economic independence and solvency of the company. Accordingly, the following arises:
- That financial planning is a conscious activity aimed at creating order in the domain of the financial function of the company;
- That financial planning is a financial forecast in terms of determining the expected financial inflows and outflows, which should result from the total business activities of the company for a certain period;
- That financial planning expresses the optimal future decisions related to the way the acquisition and use of funds. (Ivanič & Nešič, 2011)

The methodology of preparation of the financial plan is in direct correlation with the financial policy of the company. When compiling the financial plan it is necessary to provide relevant information contained in the plans of procurement, production, sales, investments, staff and resources and so on. This mutual dependence of the functional areas of the company or their plans is graphically shown in Figure 3.

The financing plan cannot be autonomous (isolated) but should emerge from the plans of the entire business system. That means that in the optimization of the location of the financial resources in strategic planning active participation should have: purchasing, production, finance office and all accompanying departments of the company thus planned elements of the financial plan could actually be connected with each other.

Financial planning allows through common expression to observe and analyze all events in the company in any time. With the mediation of the plan of the total revenues, expenses, profits and its distribution is learned whether the overall operation of the company will be effective and to what extent.

Figure 3. Interdependence of the plans of functional areas of the company

Procurement plan

Production plan
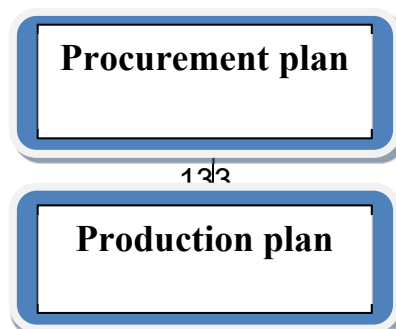
Source: Ivaniš, M.; Nečiš, S. (2011) Poslovne finansije (Prvo izdanje), Univerzitet Singidinum – Beograd, Beograd, pp.42-48

Results for financial sustainbilty
In financially sustained companies the emphasis is placed on the long term profitability before any short-term gains. Financial sustainability is achieved when the company is able to offer and sell on the market products and services at prices that cover costs and generate a sustainable profit. In order to achieve financial sustainability it is necessary to develop long-term goals that demonstrate financial stability of the company in the future. Therefore, the profits achieved shall be considered and also the level of debt and cash flow requirements. All this requires good financial planning that will show the company's position that tends to be accomplished in a specific time frame. (Wheelen & Hunger, 2012)

When making decisions that will undoubtedly affect financial situation of the company, the focus must be placed on achieving long-term goals. Exactly, that means to avoid making decisions that will bring short-term financial gains, but with a possibility to negatively affect on the long-term goals.

Maintenance of adequate cash flow is the second crucial part of the financial sustainability. It means having a sufficiently large amount of the cash income to cover liabilities made in the company. The size of the cash flows is particularly significant for financial sustainability. Through the funds are settled all liabilities incurred in the company: the liabilities of current operations, duties and responsibilities of the investments of the financial activities of the company.

Besides the report of cash flow, the financial sustainability can be verified through other financial reports, such as the balance sheet and income statement. The balance sheet provides insight into the financial position of the company and allows determination of assets and sources. This financial report helps in monitoring financial stability and sustainability of the company in the medium and long term. Assets and liabilities in the balance sheet in dynamic analysis gives insight into the changes made in permanent assets and working capital as well as sources of funds and are a good indicator for monitoring the liquidity and profitability of operations. Changes in the own and the borrowed capital give an accurate picture what is the financial stability of the company and whether such financial situation is sustainable in the long term or a strategic changes are necessary. Income statement through a review of revenues and expenditures of the company's operations complements the picture of the financial health of the company. The amount of the realized financial result - profit can be perceived if the company ends the fiscal year in a positive way or not that affects other aspects of the operations, which are investment decisions, increasing business activities and general sustainable competitiveness in the market.

Conclusion
The companies in today's business environment are faced with numerous challenges arising from rapid change of all factors of operation. Positioning and maintaining the company's competitiveness is not an easy task. Besides the allocation of tangible, intangible and human resources in the company of great importance are the financial resources.

Their importance is reflected not only in the collection of the initial financial resources and their preservation during the operation, but in continuous process of financial cushioning between increasing commitments and always insufficient funding for the development of the companies. Efficient allocation of financial resources undoubtedly contributes to achieving a positive financial result and is imperative to maintain a stable financial position of the company.

The financial management is a crucial factor of the overall business success. The objectives of the company should be incorporated and translated into money terms. The provision and management of the needed financial resources for the smooth execution of business activities is the task of the financial function.

Financial planning within the action strategic planning must be focused on achieving long-term objectives. When making decisions that will undoubtedly affect the company's financial situation should be avoided making decisions that will bring short-term financial gains with a possibility to negatively affect the long-term goals.

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