Financial footprint of “brain drain” & migration for Greece in years of crisis (2008-2016)

Dr.-Ing. Spyros A. PAPAEFTHYMIOU
Assistant Professor at NTUA

National Technical University of Athens (NTUA)
School of Mining & Metallurgical Engineering, Division of Metallurgy & Materials Science, 9, Her. Polytechniou str., Zografos, GR -157 80, Athens, Hellas
Tel: +30 210 772 4710 / Email: spapaef@metal.ntua.gr

In a period of dramatic austerity measures for Greece under the hard fiscal surveillance of the "European troika", Greek citizens faced another cruel issue: unemployment. With **unemployment reaching 25%** (**young unemployment up to 50%**) in the years of crisis, **2008-2016**, **Greeks migrated** seeking a better future.

Scope of this survey is to **shed light on the financial footprint of this migration** for the **Hellenic Republic** with emphasis to the "**brain drain**" from highly skilled scientists.

Data from the ***Hellenic Statistical Authority*** (Household Budget Survey 2015 and 2016), from ***Eurostat*** (Unemployment statistics, National accounts and GDP, Human resources in Science & Technology, European Neighbourhood Policy - South labour market statistics, Indicators measuring quality of life, Employment statistics), from the ***Ministry of Finance*** **(**State Budget for the years 2015, 2016) and the ***Ministry of Education of the Hellenic Republic*** (Budget for Education 2015 to 2017), from ***The Hellenic Confederation of Professionals, Craftsmen & Merchants (GSEVEE)*** (Research regarding the income of the Greek Households and consumption), from the ***European Commission*** (Short-term Industrial Outlook, DG Internal Market, Industry, Entrepreneurship and SMEs), from the ***World Bank*** (Global Economic Monitor 2017) and data *from various other accessible sources* were accessed and processed in order to calculate the cost of “brain drain” and to conclude on its financial footprint for the Hellenic Republic and the Greek tax payers.

The Hellenic Republic spends **2,85% of its GDP** (or **4,52 billion €**) for **Education purposes** including **0.96%** of the **GDP** (or **1,73 billion €**) for **Research**.

According to the **Household Budget Survey (HBS) 2015 and 2016** of the Hellenic Statistical Authority the **average monthly expenditure (AME)** of the households was **1.419,57€**. For **education purposes** the households spend **3-3,5%** of the AME, which equals to **47€/month** or **562€/year**. This expenditure, however, is not equally allocated to the people as it mostly burdens the financially active population, **3.727.633 working people**. Thus, the recorded private expenditure for education of the Greek families equals **133,7€/month** or **1.604€/year** instead of 562€/year as stated in the HBS. Not included in the recorded expenditure are of course expenditures without any invoice or receipt, which unfortunately represents the majority of the real

expenditures of the households. This means that the Greek households spend 9,4% of their incomes for education purposes instead of the 3,3-3,5% listed in the HBS according to official data.

Furthermore, taking into account that the Greek State's expenditure for elementary, secondary and high school is around 1,3% of the GDP and the student population is 1.737.074, we approach the Hellenic State's total expenditure to every schoolchild and every student. The State spends **1.348,5€ per year** for **every schoolchild** in elementary, secondary and high school. Adding the **private expenditure** for education as listed in the HBS, we find **2.952€/year** spent on every schoolchild. The **total public expenditure for every schoolchild** of the twelve years of compulsory education **16.182€**.

Similarly, the expenditure for Higher Education is around 0,54% of the Greek GDP. According to the latest survey of the Ministry of Education regarding the "Strategy of the Higher Education in Greece, 2016-2020" (in Greek), the active[1] students are 279.871 (see Table 3), 180.480 at Universities and 99.391 at Applied Sciences Faculties. Thus, **3.571€/year** is the average cost of educating a student in Universities and/or Applied Sciences Faculties, which for a typical medium five year (5y) period of studies adds to **17.855€**. The cost for Research is not included.

Taking into account the cost for the compulsory education and the cost of Higher Education, we find that the **average total cost for each Greek scientist** is **34.037€**.

This means that the "brain drain" in the years 2008-2016 has cost the Hellenic Republic over **15,3 billion** Euros, which represents the invested amounts for educating 450.000 scientists without taking into account the private expenditures made by their families, **Table 1**. Additionally, **4,2 billion Euros** is the cost to the Hellenic Republic deriving from the rest 260.000 people who migrated, **Table 2**. Thus, Greece donates **19,5 billion Euros** to the host countries of our **new** "**migration-generation**" (Tables 1 & 2).

Furthermore, the Government can also add in its lost investment the lost earnings from taxation from migrants that work and are taxed elsewhere. A rough conservative estimation for the **yearly lost income from taxes** by these **710.000 people** is **5,82 to 6,39 billion Euros, or 0,73 to 0,80 billion Euros per year, Table 3 (calculated on the basis of a gross salary of 1200€/month).**

In summary, the total cost to the Hellenic State from the migration of **710.000 citizens** is **19,52 billion Euros**. Furthermore, the bill to the next Administrations ranges between **5,82 to 6,4 billion Euros per year** from **lost taxes** and comes also heavy. In total the financial bleeding from the migration generation adds to **25,91 billion Euros in total** in the years from **2008 to 2016**, which equals to **3,24 billion Euros per year or 1,8% of the Hellenic GDP of the year 2017**. This means that the yearly losses from the migration generation equals the 72% of the invested money in Education for 2017 (2,85% of the GDP or 4,518 billion Euros).

[1] Active students are those whose total years of studies do not exceed the normal period plus 2 years

Table 1: Cost from the migration of scientists in the decade 2008-2017

Migration of scientists	
Years 2008 to 2016	**450.000**
Cost per scientist (public cost)	**34.037€**
Cost in billion €	**15,32**
Cost per year in billion €	**1,91**

Table 2: Cost from the migration of young people in the decade 2008-2017

Migration of young people	
Years 2008 to 2016	**260.000**
Cost of compulsory education (public cost)	**16.182 €**
Cost in billion €	**4,21**
Cost per year in billion €	**0,53**

Table 3: Losses in the state's income from the absence of taxation in the decade 2008-2017 from the migration generation (calculated on the basis of a gross salary of 1200€/month)

Migration generation 710.000 young people (incl. 450.000 scientists)	**Losses from taxation in billion € (a)**	**Losses from taxation in billion € (b)**
Total cost (2008-2016)	**5,82**	**6,39**
Cost per year in billion €	**0,73**	**0,80**

Note: Refers to state earnings from taxation a) 8.200€/y and b) 9.000€/y