Chapter 5
Fiscal Decentralization of Health Services

Dolores Jiménez-Rubio

Abstract This chapter presents the main economic arguments for and against devolution in the allocation of public expenses and revenues to subnational governments. It then explores the implications that follow from fiscal decentralization to the health sector in particular. The most common indicators of fiscal decentralization used in the research literature are discussed, together with their benefits and limitations. The chapter concludes by providing a summary of the current empirical evidence on the relationship between different measures of fiscal decentralization and various health outcome indicators.

After Reading This Chapter You Will Be Able to

- *Identify the key theoretical strengths and weaknesses associated with fiscal decentralization of health services.*
- *Distinguish among the various intergovernmental arrangements that may exist in devolved health-care systems.*
- *Understand the existing evidence on the effect of the fiscal dimension of decentralization on health care as well as the ways forward in this area.*

Activity 1

What is the main purpose of intergovernmental grants? What are the problems associated with an excessive reliance of grants on the part of sub national governments?

D. Jiménez-Rubio (✉)
Department of Applied Economics, University of Granada, Campus de Cartuja S/N,
Granada 18071, Spain
e-mail: dolores@ugr.es

K. Regmi (ed.), *Decentralizing Health Services: A Global Perspective*,
DOI 10.1007/978-1-4614-9071-5_5, © Springer Science+Business Media New York 2014

Effect of Fiscal Decentralization on Health Services: Challenges and Opportunities

In recent years many countries have moved towards more decentralization of their health-care systems. In the UK, the Scottish and Welsh Assemblies were created in 1999 providing limited discretion to Scotland and Wales over health services, among other policies. And there is a continuing debate about the need for increasing the financial accountability of both the Scottish and Welsh Assemblies, in the sense of making them more accountable for their sources of revenue. Also, in traditionally more decentralised countries such as Spain or Italy, regional governments have also seen recently increased their responsibility over their sources of revenue.

While decentralization is very often politically motivated, it can have important effects on economic issues such as efficiency in the provision of public services, equity and economic growth. The beneficial impact of decentralization is based on the assumptions that decentralization can improve the information of local decision makers about local circumstances, stimulating prompt and effective responses to local needs, and is an effective channel for people to express their preferences making local decision makers more accountable to local citizens' demands (Oates 1999). Local decision makers also have more opportunities to reduce costs than central managers. They can tailor staff and procedures to the local context and have more freedom for experimenting with alternative ways of doing things and implementing them rather than relying on centrally determined procedures. Therefore, decentralization, if properly designed and implemented, is expected to improve equity, efficiency, quality, access to health-care services, and ultimately health outcomes.

Successful implementation of decentralization requires a complex balance between political, fiscal and administrative policies. All of these elements should complement each other if the aim is to deliver public services of quality and strengthen fiscal discipline and responsiveness of local governments (something which has been labelled as the "Soufflé Theory"). In order to promote responsiveness of policymakers for the provision of public services and efficiency in the management of economic resources, decentralization should encompass a clear division of responsibilities and a transparent system of accountability (World Bank 2013a). While intergovernmental fiscal transfers may be required on equity grounds to compensate for different revenue capacities at the local level, there is a risk that too much reliance on grants places little pressure on local governments to reduce costs (Oates 1993). This is because by breaking the links between the costs and benefits, transfers make it difficult for voters to identify and penalise the causes of local inefficiencies in the use of resources (Rodden 2003). In the health-care sector in particular, there is some evidence suggesting that health-care spending by subnational governments is not responsive to reductions in transfers from the central government, implying that regions prefer to incur in deficits than to reducing health-care expenditure (Levaggi and Zanola 2003).

Potential gains to be realised from decentralization are also conditional on the existence of decentralization of political decision-making authority, and, in particular,

effective channels for the individuals to express their preferences, and incentives for the policymakers to respond to those preferences. For this reason many authors are sceptical about the successful implementation of decentralization in less developing countries, given their weaker administrative capacity and their lower initial levels of democracy as compared to developed countries (Khaleghian 2004; Bossert and Mitchell 2011). Previous studies have shown that some of the consequences of institutional environments with weak political rights and governance include low local expertise in management, poor accountability and local participation, elite capture and limited fiscal resources, all of which translate in a reduction in the efficiency in the allocation of resources. These effects might undermine the desirable impact of decentralization on health outcomes.

In spite of the compelling theoretical arguments put forward for devolution of policymaking, and health services in particular, decentralization is not without its limitations (Khaleghian 2004; Costa-i-Font 2012a). Regarding economies of scale, decentralization might generate inefficient location of facilities such as hospitals by local decision makers accountable to local electors. Central intervention in health care is also expected to result in more efficient pricing of inputs by a single purchaser of health care. Decentralization of health services with important externalities, such as immunisation services, is expected to encourage local jurisdictions to "free-ride" on the immunisation status of their neighbours. The result could be a suboptimal disease protection level provided in the country as a whole. Finally, unless the central government coordinates an adequate transfer mechanism from richer to poorer regions, decentralization may result in increased inequalities in health care if local authorities under pressures to raise their own revenues rely on user fees to finance their services or reduce the coverage of the universal health package.

Inequality in health outcomes (e.g. Montero-Granados et al. 2007) or in the access to health services following decentralization can also be considered as a natural and not necessarily negative consequence of this policy but rather as a reflection of the different regional priorities according to its preferences and needs. Some authors go even further and argue that inequalities could be regarded as a challenge for inefficient regions to perform better if a system of political incentives is in place and information about the outcomes of the system is freely available (Costa-i-Font 2012b). The most appropriate level of decentralization of health services is therefore a key policy issue that to date remains largely unresolved.

Characterising the Fiscal Dimension of Decentralization

The level of decentralization in policymaking is a complex phenomenon embracing a number of political, fiscal and administrative dimensions. As we have seen in the previous section, all these elements should complement each other in order to deliver public services of quality and increase fiscal discipline and accountability of local governments. Therefore, an accurate measure of decentralization should be able to capture a wide variety of issues such as political autonomy (range of services

Table 5.1 Describing the level of fiscal autonomy of subnational governments

Share of subnational spending on total spending
Share of government revenue raised and retained by subnational governments
Share of "shared revenue" in subnational spending/revenue
Percentage of local expenditures funded through local revenues
Percentage of local expenditures funded through intergovernmental transfers
Percentage of local expenditures funded through local revenues
Discretion in allocating expenditure across and within sectors

Source: Decentralization Toolkit, World Bank (2013a)

to be covered or access conditions in the health sector) or the legal and regulatory structure (e.g. service standards, training regulations). The crucial aspect is whether the key features of public policy and the health-care system in particular are defined centrally or whether there is substantial scope for regional variation and for subnational government's involvement in defining the basic rules of the system (Banting and Corbett 2002). However, since many of these considerations are not easy to measure empirically, in the absence of more appropriate data, only the fiscal dimension has been traditionally used to characterise decentralization in the research literature following Oates' seminal work in 1972. Table 5.1 summarises some of the main features which characterise discretion of local governments in the management of economic resources according to the World Bank (2013a).

The most commonly used dataset to generate measures of fiscal decentralization is the International Monetary Fund's (IMF) Government Finance Statistics (GFS). GFS data distinguishes between the spending and revenue patterns of central, state and local governments, thereby providing useful information for the purpose of analysing decentralization. GFS-based decentralization indicators typically measure the share of subnational (state and local) spending or revenue in the total spending or revenue for all levels of government (central, state and local). GFS also offers relevant information on vertical imbalances, that is, the degree to which subnational governments rely on transfers to finance their expenditures. In addition, for some countries government expenditure can be further classified into health and education. This is an important strength of GFS data for studying decentralization in health services in particular, since countries can vary in the way they assign their expenditure responsibilities to local governments.

Figure 5.1 shows that in some countries such as Romania, the Netherlands or Iceland, subnational governments are responsible for spending around a quarter of the total spending of all layers of government. However, health-care spending seems to be directly controlled and managed by the central government. By contrast, in countries such as Denmark, South Africa or Spain, expenditures for health-care services are highly decentralised relative to other sectors, in the sense that health-care spending is mostly spent by regional authorities. Only in some countries such as Mauritius, the USA or Norway, overall fiscal decentralization appears to represent well the level of decentralization in the health services. Therefore, using overall fiscal decentralization indicators to proxy the level of decentralization in health care

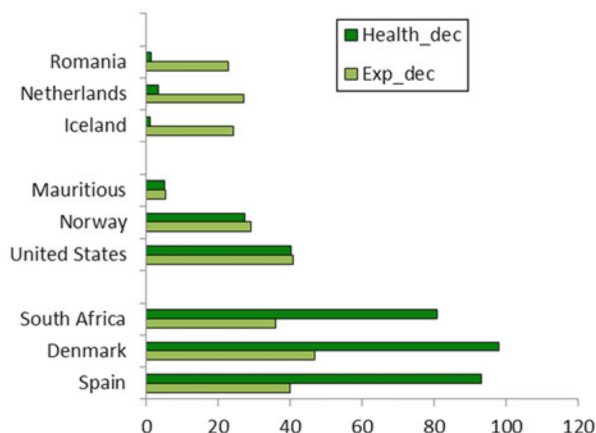

Fig. 5.1 Sub national government share of expenditure vs sub national government share of health expenditure in selected countries. 2010[ab]. Source: Own elaboration from World Bank Fiscal Decentralization dataset (2013b)

[a] Data for 2010 or latest available year

[b]Health decentralization (Health_dec) denotes the proportion of local and state expenditures on health over the total (central, state and local). Expenditure decentralization (Exp_dec) denotes the proportion of total expenditures accounted for by sub national (state or local) governments.

would result in an overestimation in the case of Romania, the Netherlands and Iceland and an underestimation in Spain, Denmark and South Africa.

While providing a consistent dataset across countries and over time, decentralization measures based on data from the GFS are not without their limitations. First of all, GFS data may provide a misleading picture of the real level of autonomy in policymaking of subnational tiers of government (Ebel and Yilmaz 2002; Rodden 2003). This is because GFS's local spending statistics include not only expenditures controlled totally or partially by local jurisdictions but also expenditures in functions controlled by higher levels of government through directives or earmarked grants, that is, grants which can only be used for specific purposes. By contrast, non-earmarked grants provide local governments with the flexibility to spend the money as if it were subnational government's own revenue. On the other hand, the GFS classifies revenues which give local governments little tax autonomy as subnational own-source revenue. These include "shared taxes", which are effectively another form of an intergovernmental transfer, and taxes which allow local authorities to set the tax rate and/or base. As a consequence, both revenue- and expenditure-based GFS data may overestimate the true level of decentralization.

In recent years the OECD has substantially improved the fiscal information available for a selected group of OECD countries by classifying taxes according to the level of discretion entitled to their local governments. This classification ranges from (a.) where the central government can set both the rate of taxation and the tax base to (e.) where subnational governments set both the tax base and the tax rate. Tax sharing agreements are further arranged into four categories from (d.1.) where the subnational governments can determine the revenue split to (d.4.) where the

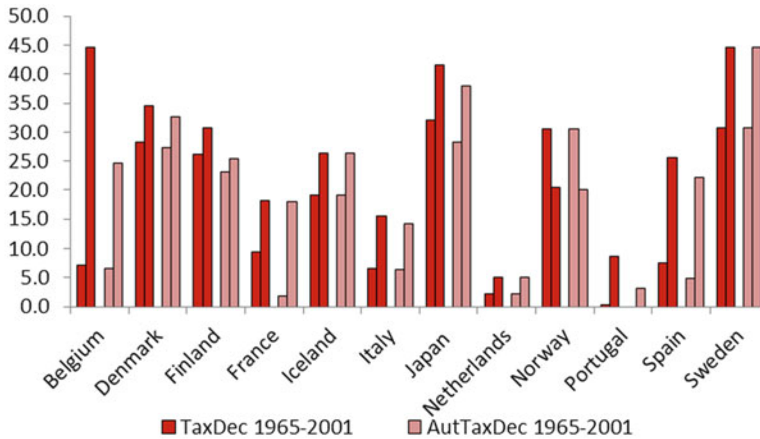

Fig. 5.2 Evolution of fiscal decentralization measures: countries with an upwards trend. 1965-2001[ab]. Source: Own elaboration from Stegarescu's dataset (2005)
[a] Fiscal data for 1965 or earliest available year and 2001 or latest available year
[b] Tax decentralization (TaxDec) denotes the sub national tax revenue over general government total revenue (central, state and local). Autonomous tax decentralization (AutTaxDec) denotes the share ofsub national tax revenue over the total revenue but only includes those taxes where the sub national government can change the tax rate, the tax base or both

national government can unilaterally determine the revenue split. Moreover, the OECD reports annual data on the type of intergovernmental transfers ("conditional" versus "earmarked") in a selected sample of countries since year 2000. While this data offers interesting new perspectives on the intergovernmental arrangements of these countries, it is somewhat limited to empirically assess the effect of fiscal decentralization since the tax autonomy information is only collected for selected years (1995, 2002, 2008 and 2010).

Drawing on the OECD classification of taxing powers of subnational governments, Stegarescu (2005) extended the OECD dataset to cover 23 countries from 1965 to 2001. Fiscal decentralization therefore measures the share of local government taxes over the general government but only considers those taxes where the local government has powers over the tax rate, the tax base or both. This dataset represents a major improvement for evaluating the effects of fiscal decentralization compared to conventional indicators of decentralization based on IMF GFS data.

According to Figs. 5.2 and 5.3, there are many countries where all taxes allocated to local governments are autonomous (Austria, Canada, Iceland, Luxembourg, the Netherlands, New Zealand, Norway, Sweden, the UK, the USA). In some other countries, however, only a small proportion of the local taxes provide local governments with the power to control the tax rate and/or the tax base. These include Australia, Germany and, to a lower extent, Portugal.

The evolution of autonomous tax and total tax decentralization shows a similar trend over the period studied with only two exceptions. These are Australia, where autonomous tax decentralization (AutTaxDec) slightly increases over the period of

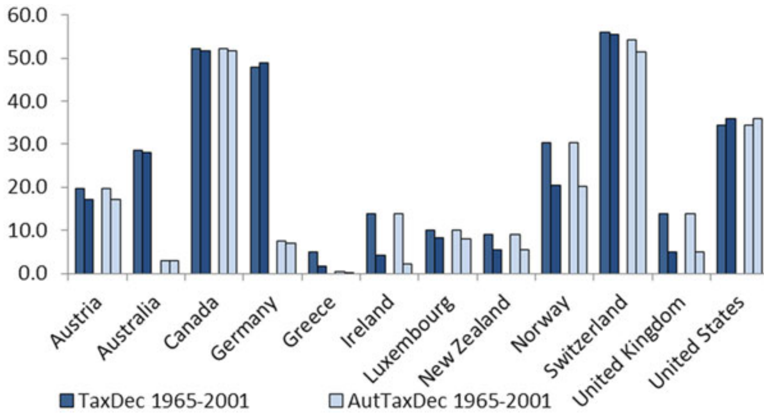

Fig. 5.3 Evolution of fiscal decentralization measures: countries with a stable or a downwards trend.1965-2001[ab]. Source: Own elaboration from Stegarescu's dataset (2005)
[a] Fiscal data for- 1965 or earliest available year and 2001 or latest available year
[b] Tax decentralization (TaxDec) denotes the sub national tax revenue over general government total revenue (central, state and local). Autonomous tax decentralization (AutTaxDec) denotes the share of sub

study, while total tax decentralization decreases (TaxDec), and Germany, where the opposite holds (see Fig. 5.3).

With respect to AutTaxDec, the improved measure of fiscal decentralization, a trend towards increasing fiscal powers of subnational governments over the period 1965–2001 can be observed in many countries but especially in Belgium, Italy and Spain (see Fig. 5.3). Ireland, New Zealand, Norway and the UK have experienced a reduction in the level of subnational fiscal autonomy, while the remaining countries, which are traditional federal countries, have shown a fairly stable degree of fiscal decentralization over the period of study (see Fig. 5.2). According to Stegarescu (2005), AutTaxDec is a reliable indicator that reflects well the institutional changes that have taken place in these countries over the 30 years of study.

To conclude, despite its limitations, to date IMF GFS data offers the most comprehensive source of information on intergovernmental fiscal relations. Treated with caution, GFS-based fiscal measures can provide useful insights on the evolution of decentralization of economic resources across time and among countries (see Table 5.2 for a summary of the decentralization indicators reviewed in this section).

Finally, there are several aspects that should be taken into account when measuring decentralization. First of all, indicators of fiscal decentralization conventionally employed in the literature do not capture important dimensions of the decentralization process such as political accountability and responsiveness to local needs. Second, some countries implement asymmetric, gradual processes of devolution of policy-making to subnational governments. This is the case of Spain where the process of decentralization of health services to regions spread over a period of 20 years starting in 1981. In these circumstances the use of aggregate data could be misleading, whereas

Table 5.2 Summary of main fiscal decentralization indicators[a]

Source	Decentralization variables	Strengths	Weaknesses
IMF GFS fiscal data	–SN share of government spending/revenue in total government spending/revenue –Share of intergovernmental transfers in SN revenues ("vertical imbalances") –Share of SN own revenues	–Comprehensive coverage: developed and less developed countries –Long time series available (early seventies on) –Health-specific information for expenditure-based decentralization	–Unbalanced dataset –Data does not reveal real level of autonomy in expenditure/revenue of SN governments
OECD Fiscal Decentralization Indicators	–Proportion of SN "autonomous" own tax revenues –Share of grants revenue of SN governments by type of grant	–Distinguishes by type of grant (earmarked versus non-earmarked) and classifies taxes according to autonomy of SN governments	–Unbalanced dataset –For taxes, coverage only for selected years (1995, 2002, 2008, 2010)
Stegarescu's fiscal autonomy measures	–Proportion of SN "autonomous" own tax revenues	–Classifies taxes according to the taxing power of SN authorities –Long times series (1965–2001)	–Unbalanced dataset –Data not up to date (it does not go beyond 2001)

[a]*SN* stands for subnational

the use of country-specific comparisons of decentralised versus non-decentralised samples provides an optimal approach for evaluating the effect of decentralization. Third, studies of fiscal decentralization should make a clear distinction between developed and less developed countries since the allocation of public resources tends to differ among the two (for instance, in poorer countries local authorities tend to rely more on taxes collected by the central government such as trade taxes).

Activity 2

What are the economic and political factors that should be considered when analyzing fiscal decentralization in less developed countries versus developed ones? In what ways could foreign aid undermine the potential benefits from decentralization?

On the foreign aid issue, see: Prud'homme "The Dangers of Decentralization 20 years later", World Bank, 2013. http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/285741-1326399585993/8366509-1348151550697/DangersOfDecentralization.pdf.

Case Study 1

Table 5.1 summarizes the main aspects which according to the World Bank Decentralization Toolkit characterize the level of fiscal decentralization of a country. In practice, however, the fiscal and intergovernmental arrangements of countries can be very different making it difficult to assess the exact degree of autonomy in decision making. Use the World Bank and the OECD Fiscal Decentralization Databases to analyze and compare the level of fiscal policy making autonomy of the following countries: Canada, Spain and Sweden. These three OECD countries have in common highly decentralized health care sectors, but differ in the way they finance their expenditures and in the freedom that their sub national governments have over their own taxes. Are there similarities in any of their fiscal features (tax revenue autonomy, share of sub national health and total spending, etc)? What are the main differences that can be found among the three countries regarding fiscal decentralization? What are the key advantages and disadvantages of using each of the fiscal proxies for decentralization?

Empirical Evidence on the Effect of Fiscal Decentralization for Health Services

In recent years an increasing number of studies have investigated the impact of fiscal decentralization on various measures of population's health such as infant mortality, life expectancy or immunisation coverage rates. Table 5.3 summarises the main results of these studies. Overall, most of the literature finds a beneficial impact of decentralization on various measures of health.

Asfaw et al. (2007) show that decentralization has a positive influence on child mortality in Indian rural villages using an index of fiscal decentralization obtained by factor analysis on the basis of three fiscal decentralization variables for the period 1990–1997. The study by Habibi et al. (2003) shows that the percent of revenue raised locally and the proportion of controlled revenue over the total have a negative and significant association with infant mortality rates for a panel of Argentinean provinces over the period 1970–1994. In addition, the authors find that during the period of decentralization reforms studied, regional inequalities were considerably reduced. Using a panel data of low- and high-income countries, Robalino et al. (2001) find that a measure of expenditure decentralization is inversely related to infant mortality rates during the period 1970–1995. Interestingly, according to the results the marginal benefit from decentralization is greater at low-income levels.

In the study by Uchimura and Jütting (2009), two measures of fiscal decentralization of Chinese counties based on the counties' expenditures and revenues were found to be significantly associated with lower infant mortality between 1995 and

Table 5.3 Summary of previous literature on the impact of fiscal decentralization on health outcomes

Author	Area of study	Period of study	Fiscal decentralization variable	Main results
Asfaw et al. (2007)	Rural villages in India	1990–1997	Decentralization is proxied by an index of fiscal decentralization obtained by factor analysis on the basis of three variables (the share of local (rural) expenditure on total state (intermediate government tier) expenditure, the total local expenditure per rural population and the share of local own revenue from the total local expenditure)	This study suggests that fiscal decentralization is negatively related to infant mortality rates. Political decentralization is a potential factor that can affect the effectiveness of fiscal decentralization
Cantarero and Pascual (2008)	15 Spanish regions	1992–2003	The key indicator of decentralization is the ratio of subnational health-care expenditure to the total health expenditure for all the levels of government	Fiscal decentralization is found to be negatively related to infant mortality over the period of study
Habibi et al. (2003)	23 Argentinean provinces	1970–1994	Two key decentralization indicators: percentage of revenue raised locally and proportion of controlled revenue over the total	Decentralization has a negative and significant association with infant mortality rates. In addition, the study shows that during the period of decentralization reforms studied, inequalities between richer and poorer regions were considerably reduced
Jiménez-Rubio (2010)	Ten provinces of Canada	1979–1995	Ratio of provincial health-care expenditure over the total health expenditure for all levels of government	Decentralization appears to have a considerable effect in reducing infant mortality rates in Canadian provinces
Jiménez-Rubio (2011)	20 OECD countries	1970–2001	Proportion of local revenue over total government revenue and proportion of revenue over which local governments can determine the tax base, the tax rate or both	Only the proportion of local “autonomous” tax revenue is found to exert a significant effect in infant mortality

Khaleghian (2004)	140 low- and middle-income countries	1980–1997	Two indicators of fiscal decentralization were used: a.) binary variable defined as the presence of taxing, spending or regulatory authority on the part of subnational authorities and b.) a combination of two variables—the share of subnational expenditures on total government expenditures and the share of health spending on total subnational expenditures	Decentralization improves immunisation coverage rates only in low-income countries
Robalino et al. (2001)	Low- and high-income countries	1970–1995	Proportion of subnational government spending over central government spending	Decentralization is associated with lower infant mortality rates. The marginal benefit from decentralization is found to be greater at low-income levels
Soto et al. (2012)	1080 Colombian municipalities	1998–2007	Locally controlled health expenditure as a proportion of total health expenditure	The measure of fiscal decentralization is negatively related to infant mortality rate. However, the effect of decentralization appears to be stronger for richer regions
Uchimura and Jütting (2009)	26 Chinese provinces	1995–2001	The authors use a measure of the proportion of counties' expenditure financed by counties' revenue ("vertical balance") and the ratio of counties' aggregate expenditure to total provincial expenditure	The study finds that more decentralised provinces have lower infant mortality rates than more centralised ones if decentralization is funded primarily by counties' own sources of revenue

2001. Finally, the recent papers by Cantarero and Pascual (2008) and Jiménez-Rubio (2010) also find an inverse relationship between fiscal decentralization, measured as the ratio of subnational health-care spending over the total, and health outcomes in the Spanish regions and the Canadian provinces, respectively.

Two recent studies improve upon previous fiscal measures of decentralization by using indicators of the degree of discretion of subnational governments in managing their revenue and spending. Using Stegarescu's indicator of local taxing power for 20 OECD countries, Jiménez-Rubio (2011) shows that fiscal decentralization exerts a considerable positive effect on infant mortality over a 30-year time span (1970–2001) only if a considerable degree of autonomy in the sources of revenue is devolved to local governments. On the other hand, Soto et al. (2012) find that the rate of locally controlled health expenditures has a substantial effect in reducing infant mortality rate in Colombian municipalities in the period 1999–2007. The authors also show that, contrary to the results found by Robalino et al. (2001), on the basis of cross-country comparisons the magnitude of the effect appears to be stronger for richer regions.

Khaleghian (2004) examines the association between fiscal decentralization and an alternative health-related outcome: the coverage rates a key infant vaccine in 140 low- and middle-income countries during the period 1980–1997. Contrary to the expectations, the findings indicate that decentralization improves coverage rates only in low-income countries. The author explains this interesting result by the likely balance between responsiveness to local needs and the preservation of central influence necessary for the effective functioning of immunisation programmes in low-income countries.

Conclusion

This chapter introduced some of the main advantages and drawbacks that follow from the theory of fiscal federalism to the health services in particular. If well designed, decentralization can promote equity, efficiency, quality of service provision, access to health-care services and ultimately health outcomes. This requires, in addition to a strong system of political rights and liberties, a system of economic incentives in which local decision makers are held accountable for their spending decisions. The key features of a well-designed fiscal decentralization system were discussed in the second section of this chapter, along with the main databases which capture some of these dimensions. Finally, section three introduced the current evidence on the relationship between fiscal decentralization and health outcomes. These studies find in general a positive effect of decentralization on health-related outcomes. However, and in line with the theoretical literature, a number of studies show that an important condition for this to happen is that decentralization is funded primarily by economic resources which incentivise local decision makers to manage the spending in an efficient way.

While the growing volume of literature on fiscal decentralization has certainly informed the debate about the impact of this policy reform, current evidence on its benefits and costs to the health system is however limited by the following reasons. Firstly, by relying on fiscal data, much of the literature fails to capture other important aspects of decentralization in policymaking or the linkages between the various dimensions of decentralization. And secondly, there is a lack of evaluation of other aspects of the health-care system that may be influenced by fiscal decentralization such as its impact on the overall health-care costs to the system or equity in access to the system (if this is considered as a higher priority in a decentralised country than regional diversity on the basis of preferences or needs). Further research is therefore needed in order to establish firm conclusions about the merits of decentralising health services.

Case Study 2

Scotland will hold a referendum in 2014 to decide whether to be an independent, separate country, whether to get more devolved powers, or to maintain the "status quo". A commission to review and improve devolution produced a document summarized in The Economist in 2008 ("*An Attempt to make devolution work better creates as many problems as it solves*", 4 December, 2008).

– Could you describe the system proposed to increase devolution in Scotland?
– What would be the main advantages and disadvantages of this system?

Recommended Reading

Ahmad, E., & Brosio, G. (2006). *Handbook of fiscal federalism*. Washington DC: International Monetary Fund.

World Bank. Decentralization and Sub national Finance Website.

References

Asfaw, A., Frohberg, K., James, K. S., & Jütting, J. (2007). Fiscal decentralization and health outcomes: Empirical evidence from rural India. *Journal of Developing Areas, 41*, 17–35

Banting, K. G., & Corbett, S. (2002). *Health policy and federalism. A comparative perspective of multi-level governance*. Kingston: McGill-Queen's University Press.

Bossert, T., & Mitchell, A. (2011). Health sector decentralization and local-decision making: Decision space, institutional capacities and accountability in Pakistan. *Social Science and Medicine, 72*, 39–48.

Cantarero, D., & Pascual, M. (2008). Analysing the impact of fiscal decentralization on health outcomes: Empirical evidence from Spain. *Applied Economic Letters, 15*, 109–111.

Costa-i-Font, J. (2012a). Fiscal federalism and European health system decentralization: A perspective. LSE Europe in question discussion paper series, 55/2012. European Institute, London School of Economics and Political Science, London, UK.

Costa-i-Font, J. (2012b). Myths of health care decentralization. *Journal of Health Services Research and Policy, 17*(4), 252–253.

Ebel, R. D., & Yilmaz, S. (2002). *On the measurement and impact of fiscal decentralization. (World Bank Policy Research Working Paper No. 2809)*. Washington DC: World Bank.

Habibi, N., Huang, C., Miranda, D., Murillo, V., Ranis, G., Sarkar, M., et al. (2003). Decentralization and human development in Argentina. *Journal of Human Development, 4*(1), 73–101.

Jiménez-Rubio, D. (2010). Decentralization of health services and its impact on health outcomes: Evidence from Canada. *Applied Economics*, *43*(26), 3907–3917.

Jiménez-Rubio, D. (2011). The impact of fiscal decentralization on infant mortality rates: Evidence from OECD countries. *Social Science and Medicine, 73*(9), 1401–1407.

Khaleghian, P. (2004). Decentralization and public services: The case of immunization. *Social Science and Medicine, 59*(1), 163–183.

Levaggi, R., & Zanola, R. (2003). Flypaper effect and sluggishness: Evidence from regional health expenditure in Italy. *International Tax and Public Finance, 10*, 535–547.

Montero-Granados, R., Jiménez-Aguilera, J. D., & Martín-Martín, J. J. (2007). Decentralization and convergence in health among the provinces of Spain (1980–2001). *Social Science and Medicine, 64*(6), 1253–1264.

Oates, W. E. (1993). Fiscal decentralization and economic development. *National Tax Journal, 46*(2), 237–243.

Oates, W. E. (1999). An essay on fiscal federalism. *Journal of Economic Literature, 37*, 1120–1149.

OECD. *OECD Fiscal Decentralization Database*. http://www.oecd.org/ctp/federalism/oecdfiscaldecentralizationdatabase.htm#A_1 Accessed 12 April 2013

Robalino, D. A., Picazo, O. F., & Voetberg, A. (2001). *Does fiscal decentralization improve health outcomes? Evidence from a cross-country analysis (Policy Research Working Paper No. 2565)*. Washington, DC: World Bank.

Rodden, J. (2003). Reviving Leviathan: Fiscal federalism and the growth of government. *International Organization, 57*, 695–729.

Soto, V. E., Farfan, M. I., & Lorant, V. (2012). Fiscal decentralization and infant mortality rate: The Colombian case. *Social Science and Medicine, 74*(9), 1426–1434.

Stegarescu, D. (2005). Public sector decentralization: Measurement concepts and recent international trends. *Fiscal Studies, 26*, 301–333.

Uchimura, H., & Jütting, J. (2009). Fiscal decentralization, Chinese style: Good for health outcomes? *World Development, 37*(12), 1924–1936.

World Bank (2013a). Decentralization toolkit. Decentralization and sub national Finance website.http://www1.worldbank.org/publicsector/decentralization/toolkit9.pdf Accessed 26 April 2013

World Bank (2013b). Fiscal decentralization indicators. Decentralization and sub national Finance website. http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/285741-1326399585993/8366509-1332861347588/gfsDec2012_indicators_final.xlsx Accessed 11 March 2013